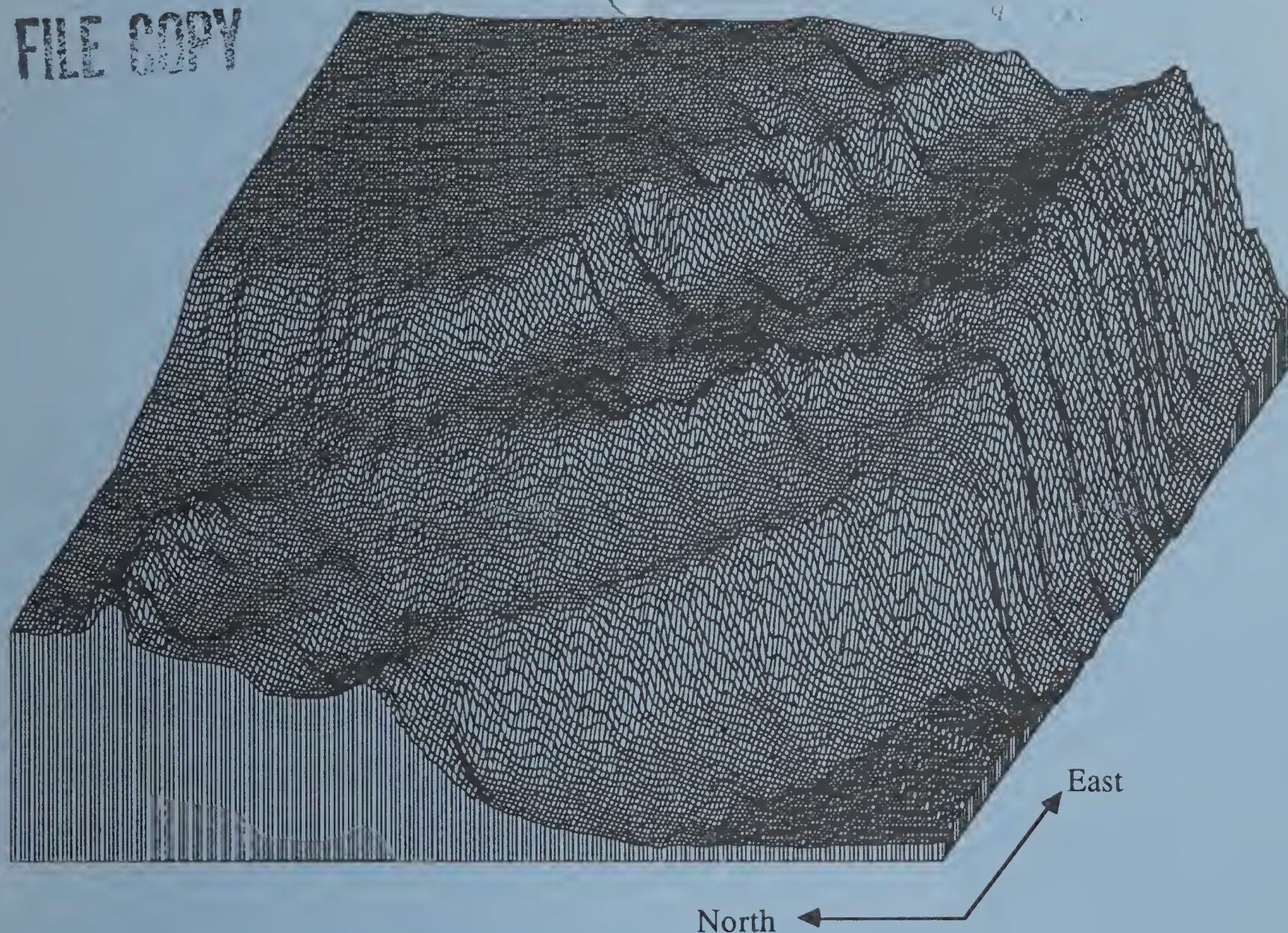


FILE COPY



# Barbados Offshore Drilling Program Cruise Report

R/V Ranger Cruise 88-13  
18/Nov/88 - 6/Dec/88

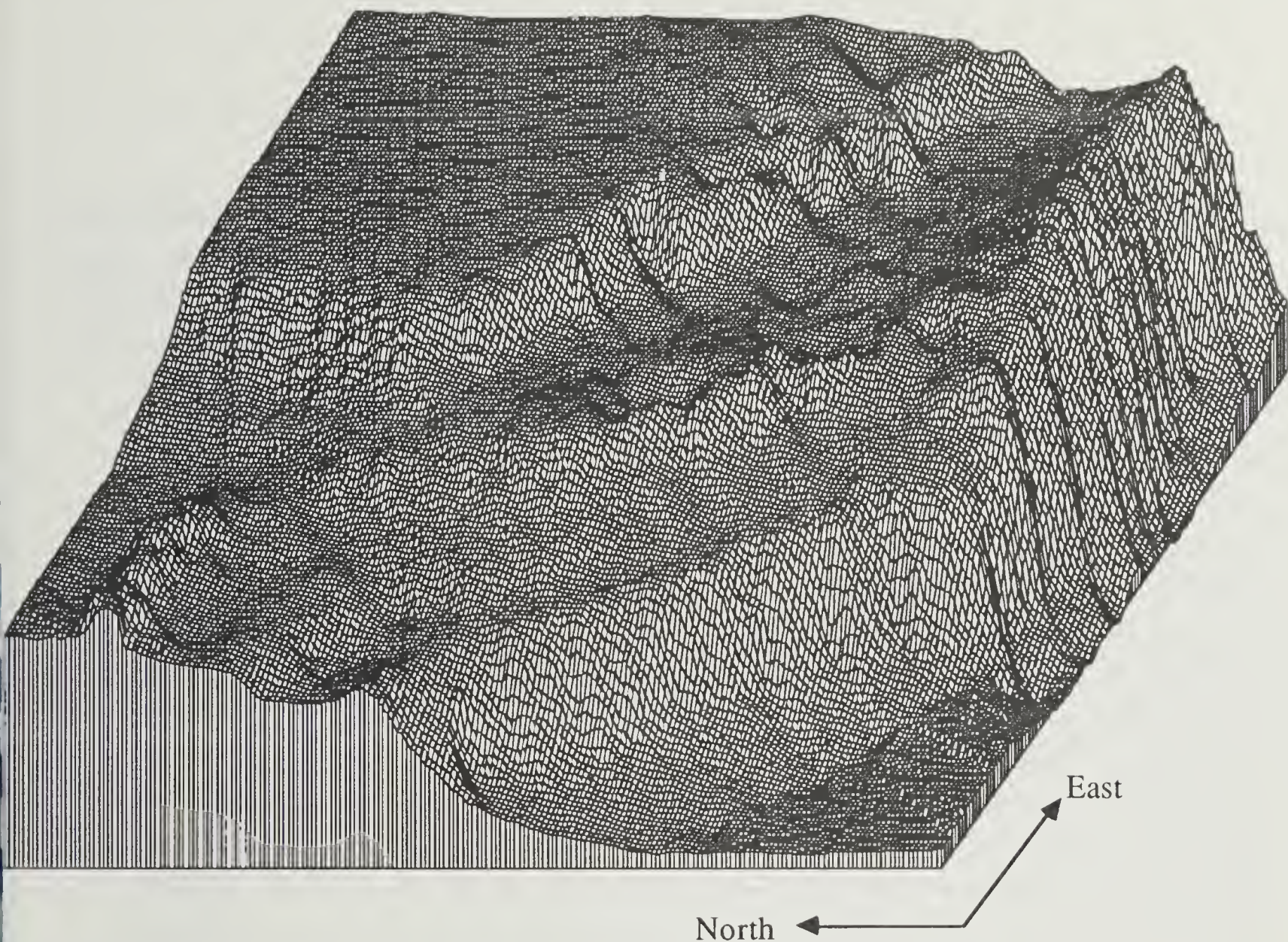
Richard G. Fairbanks, Chief Scientist  
Lamont-Doherty Geological Observatory  
of Columbia University  
Palisades, New York 10964

National Science Foundation  
Submarine Geology & Geophysics  
NSF OCE87-17172

*File copy only  
Helen 30  
Lamont 10/88*







# Barbados Offshore Drilling Program

## Cruise Report

R/V Ranger Cruise 88-13  
18/Nov/88 - 6/Dec/88

Richard G. Fairbanks, Chief Scientist  
Lamont-Doherty Geological Observatory  
of Columbia University  
Palisades, New York 10964

National Science Foundation  
Submarine Geology & Geophysics  
NSF OCE87-17172



Digitized by the Internet Archive  
in 2020 with funding from  
Columbia University Libraries

<https://archive.org/details/barbadosoffshore00fair>



## Table of Contents

Cruise Objectives .....	p. 1
Cruise Participants .....	p. 2
Composite Core Stratigraphy.....	p. 4
Core Descriptions:	
RGF 1.....	p. C1.1
RGF 2.....	p. C2.1
RGF 3.....	p. C3.1
RGF 4.....	p. C4.1
RGF 5.....	p. C5.1
RGF 6.....	p. C6.1
RGF 7.....	p. C7.1
RGF 8.....	p. C8.1
RGF 9.....	p. C9.1
RGF 10.....	p. C10.1
RGF 11.....	p. C11.1
RGF 12.....	p. C12.1
RGF 13.....	p. C13.1
RGF 14.....	p. C14.1
RGF 15.....	p. C15.1
RGF 16.....	p. C16.1
Sample Descriptions:	
RGF 1.....	p. S1.1
RGF 2.....	p. S2.1
RGF 3.....	p. S3.1
RGF 4.....	p. S4.1
RGF 5.....	p. S5.1
RGF 6.....	p. S6.1
RGF 7.....	p. S7.1
RGF 8.....	p. S8.1
RGF 9.....	p. S9.1
RGF 10.....	p. S10.1
RGF 11.....	p. S11.1
RGF 12.....	p. S12.1
RGF 13.....	p. S13.1





RGF 14 .....	p. S14.1
RGF 15 .....	p. S15.1
RGF 16 .....	p. S16.1

Core Depths:

RGF 1 .....	p. D1.1
RGF 2 .....	p. D2.1
RGF 3 .....	p. D3.1
RGF 4 .....	p. D4.1
RGF 5 .....	p. D5.1
RGF 6 .....	p. D6.1
RGF 7 .....	p. D7.1
RGF 8 .....	p. D8.1
RGF 9 .....	p. D9.1
RGF 10 .....	p. D10.1
RGF 11 .....	p. D11.1
RGF 12 .....	p. D12.1
RGF 13 .....	p. D13.1
RGF 14 .....	p. D14.1
RGF 15 .....	p. D15.1
RGF 16 .....	p. D16.1

Tidal Corrections .....	p. T1
-------------------------	-------





## Cruise Objectives

The goal of the R/V Ranger Cruise 88-13 (Nov. 18, 1988 to Dec. 6, 1988) was to core the three submarine terraces located southwest of South Point, Barbados. The primary objective was to obtain samples of the reef crest coral *Acropora palmata* deposited during the global sea level rise between 15,000 and 6,000 years before present. *Acropora palmata* growth is restricted to shallow water, generally less than five meters water depth and therefore this species is believed to be an accurate sea level indicator when recovered in cores from ancient Caribbean reefs.

There are many scientific questions which may be answered with a stratigraphic sequence of *Acropora palmata* spanning the last deglaciation.

1. Estimates of the magnitude of sea level change between the last glacial maximum and today range from 80 to 160 meters. Determining the actual change is important for calibration of the marine oxygen isotope record, interpreting seismic records, and as input to climate models, glaciology models, and earth rheology models.

2. The exact timing and the precise rate of sea level change is poorly known. Accelerator carbon-14 dates of deep sea cores indicate that the deglaciation occurred in two steps from approximately 14,500 to 11,000 years before present and a second step from 10,500 to 7,000 years before present. The stationary sea level centered at 10,500 years before present coincides with the Younger Dryas period, a time noted for cooler European temperatures and stationary ice margins of the Fenno-Scandinavian ice sheet. Knowing the rate of sea level change from Barbados cores will help determine which climatic factors, in addition to orbitally controlled insolation changes, modulate the size of continental ice sheets.

3. The carbon-14 age dating method has not been calibrated beyond the tree ring calibration of 0 to 8,000 years before present. Carbon-14 measurements of corals which are age dated by the Th-230/U-234 method will extend the carbon-14 calibration back to the limit of the carbon-14 chronometer, which is approximately 45,000 years before present.

Sixteen cores were taken from water depths ranging from 33 feet to 267 feet, figure 1. More than 1200 feet of submerged reef was drilled. Six cores are longer than 100 feet sub-bottom and one core is longer than 240 feet sub-bottom. The deepest *Acropora palmata* sample recovered is from 126 meters below sea level in core RGF-9. Assuming an average island uplift correction of five meters in 15,000 years, these results indicate that global sea level was  $131 \pm 5$  meters below present during the last ice age. *Acropora palmata* samples were recovered nearly continuously between 15 and 126 meters below present sea level. The sixteen cores collected during R/V Ranger cruise 88-13 provide an *Acropora palmata* sampling resolution of approximately 100 years per meter of core. This accumulation rate is an order of magnitude faster than the sampling resolution of deep sea cores. In addition to excellent *Acropora palmata* recovery, *Montastrea annularis* was also sampled in great abundance in some cores. Annual growth bands are clearly visible in many *Montastrea annularis* core samples which will permit detailed isotopic studies with an annual resolution.

The R/V Ranger Cruise 88-13 coring program exceeded all proposed sampling objectives. This success was in large part due to the highly motivated and extremely capable drilling crew from Furgo-McClelland supervised by Mr. Ken Taylor and the highly skilled boat handling abilities of Captain Milt Bordeaux and the dedicated crew of the R/V Ranger. Many Barbados agencies assisted our drilling program in the early planning stages as well as during our drilling project. These include but are not limited to Dr. Hunte at the Bellairs Research Institute, Mr. Barker at the Barbados National Oil Company Limited, Mr. Sealy and Mr. Hope at the Barbados Water Works, Mr. Padmore and Mr. Atherly at the Coastal Conservation Commission, Mr. McConney at the Fisheries Division. A special thanks goes to Mr. Hope of the Barbados Water Works for providing us a valuable replacement part for our drilling rig.





## Cruise Participants

### R/V N.U.S.C. Ranger Crew:

Milt Bordeaux	Captain
Paul Scott	First Mate
Nelson Julius	Chief Engineer
Robert Vallella	Second Mate
Dan Saunders	First Engineer
Jim Casey	Electrician
Joey Bennett	Cook
Jim Willhite	Deckhand
Bill Dunn	Deckhand
Dan Papp	Deckhand

M.A.R., Inc.  
500 E. 24 St.  
Fort Lauderdale, Florida 33316

M.A.R., Inc.  
N.U.S.C. Ranger Dept.  
Building 118  
Newport, Rhode Island 02840

### Drilling Crew:

Ken Taylor	Supervisor
Billy Taylor	Driller
John Gibson	Driller
Ralph Craig	Roughneck
Jeff Woods	Roughneck
Darrel Nyquist	Roughneck
James Philbin	Roughneck

Fugro-McClelland  
6100 Hillcroft  
Houston, Texas 77274

### Scientists:

Richard G. Fairbanks	Chief Scientist
Ted Baker	Scientist
Chris Charles	Scientist
Tom Janacek	Scientist
Robin Lighty	Scientist
Delia Oppo	Scientist
Christina Ravelo	Scientist

Lamont-Doherty Geological Observatory  
of Columbia University  
Palisades, New York 10964





### Participating Agencies in Barbados

Barbados National Oil Company Limited  
Barbados Water Works Department  
Bellairs Research Institute  
Barbados Coastal Conservation Commission  
Barbados Fisheries Division

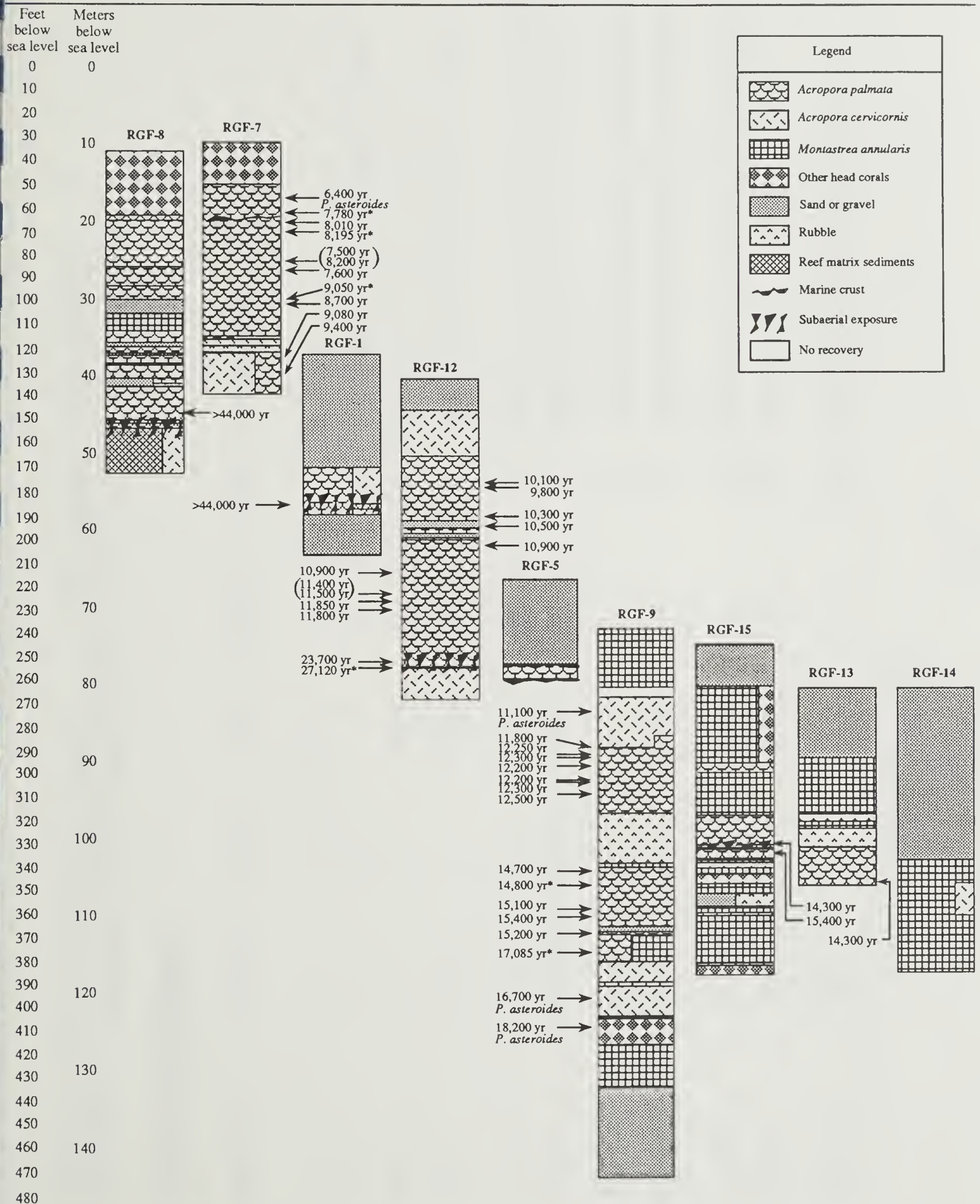


# Barbados Offshore Drilling Program

Research Vessel N.U.S.C. Ranger

Cruise 88-13

18/November/88 - 6/December/88







Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 1 18/Nov/88 20:28AST Lat=13.0346°N Lon=59.5423°W Water depth=122'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
Hammer sampler						
RGF 1-1	0 - 2	30/12	?	19	79	carbonate sand, w/ M. annularis piece in middle
RGF 1-2	5 - 7	?	02:36?	20	83	coarse grained carbonate sand & gravel
RGF 1-3	23 - 25	?	04:35	13	54	carbonate sand & gravel, chunk of S. siderea at bottom
RGF 1-4	27-29	45/8	05:00?	8	33	carbonate sand at top, consolidated sand at bottom
RGF 1-5	28.5-30.5	50/10	05:37	9	38	unconsolidated carbonate sand with chunk of S. siderea in middle
RGF 1-6	30-32	50	?	24	100	carbonate sand at top grading to gravel at bottom
RGF 1-7	40-42	50	07:23	22	92	carbonate sand with piece of 1.5" A. palmata near top
RGF 1-8	44-46	60	08:30	24	100	carbonate sand at top grading to gravel at bottom
RGF 1-9	45-47	60	08:55	24	100	carbonate sand & gravel, bits of A. palmata
RGF 1-10	45-47	60	09:30	24	100	carbonate sand & gravel, bits of A. palmata
Switched to NX drill string						





# Barbados Offshore Drilling Program      R/V Ranger      Cruise 88-13

Hole=RGF 1    18/Nov/88    20:28AST    Lat=13.0346°N    Lon=59.5423°W    Water depth=122'

## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 1-11	48	N.A.	18:37	12	52	1 1/2 " marine carbonate cement, lower 10 1/2 " A. palmata and A. cervicornis chunks (1 - 12 sq. in.). Encrusting forams on outer surface.
RGF 1-12	50	N.A.	19:14	12	52	A. palmata and cervicornis rubble.
RGF 1-13	50.9	N.A.	20:16	13.5	56	A. cervicornis rubble overlying 4 1/2 " A. palmata piece.
RGF 1-14	56	N.A.	20:51	12	50	7" A. palmata/cervicornis rubble overlying an in-situ piece of A. palmata (5" ) w/ Mg-calcite cement.
RGF 1-15	56.8	N.A.	21:20	14	58	3 1/2 " of gravel overlying 9" gravel/A. cervicornis/A. palmata rubble.
RGF 1-16	59.4	N.A.	21:38	7.5	31	A. cervicornis pieces. Sequence and orientation unknown.
RGF 1-17	62.25 (10' barrel)	N.A.	23:13	21	18	9 " cervicornis rubble, 2" marine calcareous cement, 4" oriented A. palmata, 2.5" oriented A. palmata, 3.5 in oriented A.palmata
RGF 1-18	64.6 (10' barrel)	N.A.	23:56	7	6	Heavily encrusted A. cervicornis
RGF 1-19	82 - 92 (?)	N.A.	04:45	55		coarse grained sand



Barbados Offshore Drilling Program      R/V Ranger    Cruise 88-13  
Hole=RGF 2    21/Nov/88    13:00AST    Lat=13.0367°N    Lon=59.5475°W    Water depth=227'

Core Descriptions

<u>Hole-Core</u>	<u>SBD(ft.)</u>	<u>Strokes</u>	<u>Time</u>	<u>Length(in)</u>	<u>%Rec.</u>	<u>Core Description</u>
RGF 2-1	227'	0	17:20	2"		Coralline algae, serpulid worms
RGF 2-2	227'	0	21:00	20"		15" Calcareous sand overlying 5" M. cavemosa





Barbados Offshore Drilling Program      R/V Ranger      Cruise 88-13  
Hole=RGF 4    23/Nov/88    01:00AST    Lat=13.0337°N    Lon=59.5457°W    Water depth=221'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
Hammer sampler						
RGF 4-1	0 - 2	30/12	03:30	22	61	17" sand overlying 4" M. annularis, marine crust
RGF 4-2	11-12	?	04:30	8.5	24	Sand and marine crust



## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
Hammer sampler						
RGF 5-1	14'		06:27	14"		Sands w/ marine crust at bottom
RGF 5-2	15'		06:55	?		rubble and crust
RGF 5-3	18'		07:20	22"		rubble and crust
RGF 5-4	20'		08:40	25"		Rubble (probably cave-in)
RGF 5-5	20'		09:30	25"		Rubble w/ cervicornis, fine grained calcareous sand/silt
RGF 5-6	21'		10:00	17"		Rubble, cervicornis
RGF 5-7	23'		10:19	27"		rubble w/ sand at top
RGF 5-8	25'		11:00	30"		Rubble w/ sand at top
RGF 5-9	26'		11:45	25"		4" sand, 11" rubble, 10" calc cement w/ piece of palmata
RGF 5-10	27'	100	12:20	24"		6" sand, 18" rubble
RGF 5-11	28'	100	13:00	24"		sand
RGF 5-12	29'	100	13:30	24"		sand
RGF 5-13	34'	100	14:00	24"		6" sand (compressed in box, 18" coarse gravel/rubble (cervicornis))





## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
Switched to NX drill string						
RGF 5-14	36' (?)	11/24/88	01:00	12"		Cervicornis rubble with crust at bottom.
RGF 5-15	38-41' (?)		04:00	5"		A. palmata rubble and crust.



Barbados Offshore Drilling Program      R/V Ranger    Cruise 88-13  
Hole=RGF 6    23/Nov/88    06:27AST    Lat=13.0337°N    Lon=59.5457°W    Water depth=223'

**Core Descriptions**

<u>Hole-Core</u>	<u>SBD(ft.)</u>	<u>Strokes</u>	<u>Time</u>	<u>Length(in)</u>	<u>%Rec.</u>	<u>Core Description</u>
NX drill string						
RGF6-1	7.8'		17:00	14.5"		Rubble overlying M. annularis





Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 7 25/Nov/88 11:20AST Lat=13.0401°N Lon=59.5408°W Water depth=33.5'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
5' barrel, NX drill string						
RGF 7-1	3'	11/25/88	14:05	12"		M. cavernosa
RGF 7-2	5.65'		16:05	4.25"		M. cavernosa
RGF 7-3	18.3'		18:45	32"		29" almost all M. cavernosa, over 3.5" oriented A. palmata
RGF 7-4	24.2'		19:25	22"		8" coral rubble, 11.5" oriented A. palmata, 4.5" coral rubble, probably A. palmata
RGF 7-5	26.3'		20:45	20.5"		Apalmata rubble overlying 11.5" of A. palmata pieces, 8" A. palmata rubble
RGF 7-6	29.7'		21:00	13		A. palmata
RGF 7-7	32.5'		21:54	18"		A. palmata
RGF 7-8	34.'		22:46	12		A. palmata rubble, A. palmata
RGF 7-9	36.4'		23:15	22		0.5" marine cement overlying A. palmata frags, pieces rubble and two oriented A. palmata pieces
RGF 7-10	39.3'		23:30	20"		2" A. palmata rubble overlying 2 oriented A. palmata pieces 8", 9" .



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 7 25/Nov/88 11:20AST Lat=13.0401°N Lon=59.5408°W Water depth=33.5'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 7-11	42.50'	11/26/88	00:05	17.5"		4.5" A. palmata rubble overlying 6.5" and 2.25" oriented A. palmata overlying 3" A. palmata rubble overlying 1.25" oriented A. palmata.
RGF 7-12	49.83'		02:00	14"		1" A. palmata chips (fresh fracture surfaces), overlying 2 oriented pieces of A. palmata, 9.25" and 3.75".
RGF 7-13	54.60'		02:25	16.75"		4" oriented A. palmata, 4" A. palmata rubble, 3" oriented A. palmata, 1" A. palmata and A. cervicornis rubble, 2.75" oriented A. palmata, 2" oriented A. palmata.
RGF 7-14	58.42'		03:40	13"		9.5" A. palmata rubble, 3.5" oriented A. palmata.
RGF 7-15	60.25		04:20	9"		9" A. palmata rubble and fragments
RGF 7-16	64.42		04:45	19"		6" A. palmata gravel, 3" oriented A. palmata, 2" oriented A. palmata, 3" fragments of A. palmata, 1.5" oriented A. palmata, 3.5" A. palmata.
RGF 7-17	68.42		05:30	7"		7" A. palmata rubble.
RGF 7-18	70.85		05:50	1.75"		1.75" oriented A. palmata
RGF 7-19	74.54		06:25	17.5"		1.5" oriented A. palmata, 5" A. palmata and A. cervicornis rubble, 4.5" oriented A. palmata, 4" A. palmata and A. cervicornis rubble, 2.5" oriented A. palmata.



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 7 25/Nov/88 11:20AST Lat=13.0401°N Lon=59.5408°W Water depth=33.5'

**Core Descriptions**

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 7-20	80.29		06:45	8.5"		2.5" A. palmata (orientation unknown) overlying 6" section of A. palmata and A. cervicornis rubble.
RGF 7-21	85.42		07:15	7"		7" section of A. cervicornis rubble with a few fragments of A. palmata.
RGF 7-22	87.33		07:40	8"		8" section of A. cervicornis rubble with a few fragments of M. annularis and A. palmata
RGF 7-23	89.17		08:05	22"		6" A. cervicornis and A. palmata rubble, 6.25" oriented A. palmata (in 3 pieces), 2.25" oriented A. palmata (may be part of overlying sample), 5.5" oriented A. palmata, 2" A. cervicornis and A. palmata rubble with some in place silt matrix (?).
RGF 7-24	92.58		08:35	5"		5" A. cervicornis and A. palmata rubble.
RGF 7-25	93.08		09:00	11"		5" A. cervicornis rubble with a few fragments of A. palmata, 2 3" oriented pieces of A. palmata.
RGF 7-26	94.38		09:25	19.5"		4" A. cervicornis rubble with A. palmata and M. annularis fragments, 2 5" oriented A. palmata pieces, 2.25" oriented A. palmata, 1" A. palmata fragments, 2.25" oriented A. palmata.
RGF 7-27	99.27		10:00	20.75"		5" A. cervicornis rubble with a few pieces of A. palmata, 2.75" oriented A. palmata, 1.5" of A. palmata fragments with a few pieces of A. cervicornis, 4" oriented A. palmata, 2" A. palmata





## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 7-28	104.75		10:30	15"		fragments with a few pieces of <i>A. cervicornis</i> , 5.5" oriented <i>A. palmata</i> .
						15" section of <i>A. cervicornis</i> and <i>A. palmata</i> rubble. Fresh pieces of <i>A. palmata</i> separated from rubble.
RGF 7-29	109.67		11:25	4"		4" section of <i>A. cervicornis</i> rubble with a few pieces of <i>A. palmata</i> .



# Barbados Offshore Drilling Program

R/V Ranger Cruise 88-13

Hole=RGF 8 26/Nov/88 23:00AST Lat=13.0401°N Lon=59.5408°W Water depth=35'

## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
NX drill string						
RGF 8-1	14.40		03:27	7.25"		4" section of rubble (with a 2" piece of Siderastrea siderea, mollusc shells, M. cavernosa, A. cervicornis, Diploria, Millepora) overlying a 3.25" piece of oriented Diploria.
RGF 8-2	18.85		04:00	13.75"		4" rubble (Diploria frags and unidentified highly altered pieces), 2.75" oriented M annularis, 2.5" section of rubble ( Diploria and M. annularis frags), 4.5" oriented M. annularis.
RGF 8-3	23.08		05:15	23"		3.5" coral rubble, 5.75" oriented M. annularis, 3" coral rubble, 1.5" oriented M. annularis, 2.75" oriented M. annularis and 6.5" oriented M. annularis.
RGF 8-4	26.9		06:50	36.75"		7" coral rubble, 3.75" oriented A. palmata, 3.5" oriented M. annularis, 6.5" oriented M. annularis, 4.5" oriented M. annularis, 3.5" oriented A. palmata, 5" coral rubble, 3" oriented A. palmata.
RGF 8-5	31.85		08:20	37.75"		5" coral rubble, 3.25" oriented A. palmata, 3" coral rubble, 5.75" oriented A. palmata, 6.25" oriented A. palmata, 1" A. palmata, 2.5" coral rubble, 3.5" oriented A. palmata, 5" oriented A. palmata, 2.5" A. palmata fragments.
RGF 8-6	38.71		08:50	15.5"		1.5" oriented A. palmata, 2" A. palmata rubble, 3.25" oriented A. palmata, 2.5" oriented A. palmata,





## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 8-7	42.67		09:35	28"		3.5" A. palmata fragments, 2.75" oriented A. palmata.  2" A. palmata and A. cervicornis fragments, 1.75" A. palmata piece, 3.75" oriented A. palmata, 1.5" A. palmata fragments, 5 pieces oriented A. palmata (3.5", 3.25", 3.25", 3.5", 4.5"), 1" A. palmata fragments.
RGF 8-8	47.54		10:30	17.5"		1.25" oriented A. palmata, 3" A. palmata rubble, 3 pieces oriented A. palmata (3.25", 2", 2.25"), 2.5" A. palmata rubble, 2 pieces oriented A. palmata (1.75" and 1.5").
RGF 8-9	49.50		11:10	6"		6" of A. palmata and A. cervicornis rubble.
RGF 8-10	50.00		11:30	12"		4.5" A. palmata rubble (with A. cervicornis and Millepora), 7.5" oriented A. palmata in several pieces.
RGF 8-11	53.46		11:50	18.5"		6" A. palmata rubble (with A. cervicornis and Millepora), 8.5" oriented A. palmata, 4" fragments of altered A. palmata.
RGF 8-12	57.45		13:15	17.5"		7.5" calcareous sand overlying 4" sand w/ A. cervicornis and A. palmata frags., above 3" oriented A. palmata, 2 altered A. cervicornis pieces, and another oriented A. palmata piece
EGF8-13	63.0		14:10	24"		All A. palmata, 3 large pieces, 3 sections in pieces/frags, all have grey alteration surfaces



Barbados Offshore Drilling Program      R/V Ranger    Cruise 88-13  
Hole=RGF 8    26/Nov/88    23:00AST    Lat=13.0401°N    Lon=59.5408°W    Water depth=35'

**Core Descriptions**

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 8-14	63-65 <sup>1</sup>		16:24	61"		52" calcareous sand overlying A palmata pieces, oriented A palmata, more pieces, all w/ grey alteration surfaces.
RGF 8-15	66.04		19:00	46.5"		41.5" calcareous sand overlying 2" highly encrusted M. annularis, and highly altered unidentified coral rubble.
RGF 8-16	68.58		21:00	41"		5" grey altered coralline rubble, 2 pieces unoriented A. palmata, 5" coral rubble, 3.5", 4", 5", 4", 7", 6.5" oriented M. annularis, first three w/ grey alteration, last three w/o.
RGF 8-17	73.08		21:50	23"		7" A. palmata/M. annularis rubble, 5", 4" oriented M. annularis, 1.5 " heavily encrusted A. palmata, 5.5" oriented relatively fresh A. palmata.
RGF 8-18	74.67		23:30	34"		4" large coral pieces, overlying 3" coral rubble, over 27" of A. palmata that fit together. Now in 3 pieces, have grey alteration surfaces at breaks so was broken before coring
RGF 8-19	82.33		23:10	33.5"		16" of calcareous sand overlying 3", 2", 2", 6", 4.5" of oriented A. palmata w/ grey alteration surfaces, some calcite infill, borings and in-place mollusks in bores

---

<sup>1</sup>Final depth reached is uncertain. Drillers were aiming for 63-65'. 65 seemed more reasonable so assigned core depth 59.92 (65' minus core length)



# Barbados Offshore Drilling Program

## R/V Ranger Cruise 88-13

Hole=RGF 8' 26/Nov/88 23:00AST Lat=13.0401°N Lon=59.5408°W Water depth=35'

### Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 8-20	87.5		23:40	30"		5" A. palmata rubble, 3", 3", 4" of oriented A. palmata w/ grey alteration surfaces, Mg-calcite infill, 2" A. palmata frags, unknown orientation, 3", 1", 3", 4" oriented A. palmata w/ grey alteration surfaces.
RGF 8-21	91.5		00:10	24"		8" carbonate sand, 6" carbonate sand with A. palmata fragments, 3 pieces oriented A. palmata (2.5", 2.75", 4.75").
RGF 8-22	97.96		00:45	24.5"		2.25" oriented A. palmata, 4" A. palmata rubble, 3.25" oriented A. palmata, 4" oriented A. palmata, 5.5" oriented A. palmata (in 2 pieces), 5.5" carbonate sands.
RGF 8-23	100.08		01:30	29"		9" A. palmata and A. cervicornis rubble, 20" carbonate silt with A. cervicornis lithis fragments.
RGF 8-24	102.13		01:50	22.5"		1.5" A. palmata, 2.75" oriented A. palmata, 12" carbonate silt with A. palmata and A. cervicornis lithic fragments, 2.5" oriented A. palmata, 1.25" A. palmata (?), 2.5" oriented A. palmata.
RGF 8-25	105.40		02:30	43.75"		6 pieces oriented A. palmata (3", 6.75", 6", 2", 2.5", 10"), 10" A. palmata fragments, 3" oriented A. palmata. All pieces at least partially altered.
RGF 8-26	111.98		03:00	24.25"		17" fragmented A. palmata in silt matrix, 3 pieces oriented A. palmata (2.25", 2.25", 2.75").





Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 8 26/Nov/88 23:00AST Lat=13.0401°N Lon=59.5408°W Water depth=35'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 8-27	115.73		03:35	15.25"		4.25" oriented A. palmata, 11" A. palmata rubble.
RGF 8-28	117.23		04:00	9.25"		3.25" oriented A. palmata and 6" A. palmata rubble.
RGF 8-29	118.44		04:40	18.75"		5" A. palmata and A. cervicornis rubble, 2.75" oriented A. palmata, 3" oriented A. palmata, 8" A. palmata rubble.
RGF 8-30	120.81		05:20	50.25"		2.75" oriented A. palmata, 6" A. palmata rubble, 6.75" lithified matrix with A. cervicornis lithic fragments, 3" oriented A. palmata, 3" lithified matrix, 6.25" lithified matrix with A. cervicornis, 4.5" A. cervicornis rubble, 4 pieces lithified matrix (3.5", 2.5", 3.75", 2.75"), 4" A. palmata and A. cervicornis rubble, 1.5" oriented A. palmata.
RGF 8-31	128.17		06:00	22"		5" fragments of lithified matrix, 2 pieces of oriented lithified matrix with A. cervicornis lithic fragment (3", 3.5"), 2.5" oriented lithified matrix, 5" fragments of lithified matrix, 3" oriented lithified matrix.
RGF 8-32	130.5		06:40	18"		5" fragments of A. cervicornis and lithified matrix, 2 pieces of oriented lithified matrix with A. cervicornis lithic fragments (4.25", 4.75"), 4" fragments of lithified matrix and A. cervicornis.
RGF 8-33	131.54		07:10	41.5"		2 pieces of oriented lithified matrix (2.25" and 2"), 1.5" fragments of lithified matrix, 4 pieces of lithified matrix with A. cervicornis (2.75", 3", 3.5", 3"), 4" fragments of lithified matrix and A. cervicornis, 4.5"



# Barbados Offshore Drilling Program      R/V Ranger      Cruise 88-13

Hole=RGF 8    26/Nov/88    23:00AST    Lat=13.0401°N    Lon=59.5408°W    Water depth=35'

## Core Descriptions

<u>Hole-Core</u>	<u>SBD(ft.)</u>	<u>Strokes</u>	<u>Time</u>	<u>Length(in)</u>	<u>%Rec.</u>	<u>Core Description</u>
RGF 8-34	135.79		07:30	50.5"		oriented lithified matrix, 5" fragments of lithified matrix and A. cervicornis, 3.25" oriented A. palmata, 5" fragments of lithified matrix, 1.75" oriented lithified matrix.
						4 pieces of oriented lithified matrix with coral lithic fragments (3" , 5" , 3" , 2.75"), 4.5" fragments of lithified matrix and A. cervicornis, 3 pieces of oriented lithified matrix (3" , 4.5" , 6"), 3.5" fragments of lithified matrix, 2 pieces of lithified matrix (5" , 7.75") and 6" fragments of partially lithified matrix with sand.
RGF 8-35	143.25		07:50	21"		2 pieces oriented partially lithified sandy matrix (2.5" , 2.75"), 2.5" fragments of partially lithified sand and A. cervicornis, 7 pieces of partially lithified sand matrix (.5" , 1" , 2" , 1" , 1.25" , 1.5" , 3" , 3" fragments of partially lithified sands and A. cervicornis.



Barbados Offshore Drilling Program      R/V Ranger      Cruise 88-13  
Hole=RGF 9    29/Nov/88    10:00AST    Lat=13.0433°N    Lon=59.5556°W    Water depth=242'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 9-1	13.75		18:44	39		5" calcareous sand overlying, 27" M annularis (8 major oriented pieces some smaller fragments)
RGF 9-2	18.54		19:11	41.5		41.5" oriented A. annularis made up of 7 large pieces and a few fragments
RGF 9-3	23.71		19:36	37.5"		M. annularis rubble, overlying 21" oriented M. annularis (3 large pieces), A. palmata rubble, 4.5" oriented A. palmata, and Cladocora arbuscula rubble
RGF 9-4	31.92		20:30	13"		11" coral rubble (A. cervicornis, M. annularis) overlying 2" piece of submarine hardground.
RGF 9-5	34.17		21:00	16"		16" A. cervicornis rubble
RGF 9-6	41.5		21:30	6"		6" A. cervicornis rubble, 1 gastropod shell
RGF 9-7	45		22:00	24"		20 " A. cervicornis/palmata, some lithified matrix. Coral pieces have grey alteration crust and Mg-calcite infill overlying a 4" oriented piece of A. palmata
RGF 9-8	48.17		22:45	22"		6" A. cervicornis rubble overlying 5" , 2" pieces of oriented A. palmata, overlying 9" A. cervicornis rubble
RGF 9-9	50.25'		23:20	21"		7" A. cervicornis rubble, 3 2" pieces of oriented A. palmata, 2" A. palmata rubble, 2 2" pieces oriented A. palmata, 2" coral rubble





Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 9 29/Nov/88 10:00AST Lat=13.0433°N Lon=59.5556°W Water depth=242'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 9-10	52.10		23:52	20"		13" coarse calcareous sand, 7" or A. cervicornis rubble.
RGF 9-11	55.58		00:30	17"		2" carbonate sand, 2 pieces of oriented A. palmata (2.5", 3.25"), 3" carbonate sand, 3 pieces of oriented A. palmata (1.75", 3", 1.5").
RGF 9-12	60.08		00:50	23"		4" fragments of A. palmata, 7.5" oriented A. palmata, .5" fragments of A. palmata, 2 pieces oriented A. palmata (2.5", 3.5"), 1.5" A. palmata with fragments, 3.5" oriented A. palmata.
RGF 9-13	65.52		01:15	17.75"		4" fragments of A. palmata and marine crust, 2 pieces of oriented A. palmata (2.25", 8.5"), 3" fragments of A. palmata and marine crust.
RGF 9-14	71.29		01:40	8.5"		6" fragments of marine crust and A. palmata, 2.5" oriented A. palmata.
RGF 9-15	76.21		02:15	9.5"		3.5" fragments of marine crust and A. palmata, 1" A. palmata, 1.5" oriented M. annularis, 3.5" fragments of marine crust and coral.
RGF 9-16	80.5		03:00	18"		11" fragments of A. palmata, A. cervicornis and marine crust, 3.5" oriented marine crust, 3.5" fragments of A. palmata.
RGF 9-17	86.25		03:55	9"		9" fragments and rubble of A. palmata, M. annularis, A. cervicornis, marine crust, and possibly unidentified corals.



**Barbados Offshore Drilling Program      R/V Ranger    Cruise 88-13**  
**Hole=RGF 9    29/Nov/88    10:00AST    Lat=13.0433°N    Lon=59.5556°W    Water depth=242'**

**Core Descriptions**

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 9-18	96.00		05:25	12"		9" fragments and rubble of A. palmata, Diploria, A. cervicornis, and marine crust, 3" oriented M. annularis.
RGF 9-19	100.54		06:00	17.5"		9" sand and fragments and rubble of M. annularis, A. cervicornis and marine crust, 4.5" oriented M. annularis, 4" sand and fragments of M. annularis.
RGF 9-20	102.65		07:15	16.25"		6" fragments and rubble of A. palmata, M. annularis, and marine crust, 6.25" oriented A. palmata, 2 oriented pieces of marine crust (2.25", 1.75").
RGF 9-21	104.50		08:00	30"		1.5" M. annularis, 9.5" (in 6 pieces) oriented A. palmata with thick marine crust, 1.5" fragments of marine crust, 6.5" (in 2 pieces) oriented A. palmata, 5.5" oriented A. palmata, 2" fragments of marine crust, 3.5" (in 5 pieces) A. palmata with thick marine crust.
RGF 9-22	107.77		09:20	14.75"		6" fragments of A. palmata and marine crust, 2.75" oriented piece of marine crust, 2.5" fragments of marine crust, 3.5" oriented A. palmata.
RGF 9-23	109.75		09:45	14"		8" oriented A. palmata (in 3 pieces and one chip), 3" fragments of marine crust, 4" oriented A. palmata.
RGF 9-24	115.75		10:10	15"		2" fragments of marine crust, 13" oriented A. palmata divided into 4 samples.
RGF 9-25	121.92		10:45	1"		1" piece of A. palmata



Barbados Offshore Drilling Program      R/V Ranger    Cruise 88-13  
Hole=RGF 9    29/Nov/88    10:00AST    Lat=13.0433°N    Lon=59.5556°W    Water depth=242'

**Core Descriptions**

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 9-26	131.75		12:19	3"		2 pieces A. palmata, 1", 2". 2" is oriented.
RGF 9-27	127.67		14:00	52"		36" sand overlying 4 2" pieces of A. palmata, 6" pieces of M. annularis, 2" piece of A. palmata
RGF 9-28	133.92		15:48	13"		2" M. annularis, 9" coral rubble, 2" oriented M. annularis
RGF 9-29	136		16:00	12"		7" coral rubble (M. annularis over A. palm) over 2" highly encrusted coral piece over 3" oriented M. annularis
RGF 9-30	140.75		16:29	15"		15" A. cervicornis rubble
RGF 9-31	141.25		17:15	45"		36" sand over 9" A. cervicornis rubble
RGF 9-32	150		17:48	24"		4" A. cervicornis rubble over 3.5" oriented M. annularis over 4 " A. cervicornis rubble, 2 oriented pieces A. palmata (5", 2", part of same coral), and 5.5" A. cervicornis rubble.
RGF 9-33	160.17		18:42	22"		6" sand, 4" A. cervicornis rubble, 3" oriented M. annularis, 3" rubble, 4" and 2" Diploria
RGF 9-34	163.33		19:45	44"		4" A. cervicornis rubble over 2" M. annularis, 4" M. annularis frag over 28" oriented A. palmata (made of several pieces)





Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 9 29/Nov/88 10:00AST Lat=13.0433°N Lon=59.5556°W Water depth=242'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 9-35	168.63		20:00	40.5"		3.5" coral rubble (Diploria, cervicornis), 4" , 3" oriented A palmata, 5" rubble, 5" , 7" , 3" , 6" , 4" oriented M. annularis
RGF 9-36	169.33		20:50	44"		36" sand (probably cave-in), 8" coral rubble (M. annularis, lithified matrix)
RGF 9-37	173.63		21:20	40.5"		40.5" M. annularis, most pieces have grey alteration surfaces
RGF 9-38	180		22:15	24"		15" M. annularis (13" oriented), 9" rubble
RGF 9-39	184.08		22:50	35"		2" crust rubble, oriented M. annularis (4" , 4" ), 24" oriented Diploria (4pieces)
RGF 9-40	190.17		23:15	22"		5" encrusted oriented Diploria, 6" Diploria rubble, 11" oriented Diploria (2 large pieces)
RGF 9-41	193.33		24:00	44"		5" rubble over 34" M. annularis (12 pieces) over 2" rubble and frags M.annularis, 3" oriented M. annularis (3").
RGF 9-42	209.96		12/1/88 02:30	24.5"		4" fragments of altered coral, marine crust and sandstone, 3 pieces oriented silt/sandstone (1.75" , 1.5" , 2" ), 2.5" partially lithified sand and silt, 6.75" oriented silt/sandstone, 6" fragments of silt/sandstone and marine crust.
RGF 9-43	216.08		03:05	11"		2.25" rubble of carbonate sandstone and marine crust, 3.5" oriented carbonate sandstone, 1.5"



Barbados Offshore Drilling Program      R/V Ranger      Cruise 88-13  
Hole=RGF 9    29/Nov/88    10:00AST    Lat=13.0433°N    Lon=59.5556°W    Water depth=242'

Core Descriptions

<u>Hole-Core</u>	<u>SBD(ft.)</u>	<u>Strokes</u>	<u>Time</u>	<u>Length(in)</u>	<u>%Rec.</u>	<u>Core Description</u>
RGF 9-44	225.38		03:50	19.5"		oriented altered coral, 3.75" rubble of carbonate sandstone and marine crust.  8" rubble of marine crust, carbonate sandstone and possibly altered coral, 2 pieces oriented lithified carbonate sediment (2.75", 3.5"), 3" fragments of lithified carbonate sediment, 2.25" oriented lithified carbonate sediment.
RGF 9-45	231.92		04:20	1"		1" rubble of marine crust, carbonate sandstone and altered coral.



## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 10-1	14.29		15:24	44.5		2" marine crust over 7" M. annularis over 9.5" M. cavernosa, over 4" A. plamata, 22" M. annularis
RGF 10-2	21.17		16:40	22		3" crust and M. annularis rubble, 19" M. annularis, most oriented
RGF 10-3	0?		21:45	5		M. annularis fragments- this material came up in casing, drillers do not know what depth but they think it may be surface material





Barbados Offshore Drilling Program      R/V Ranger      Cruise 88-13  
Hole=RGF 11    1/Dec/88    08:35AST    Lat=13.0433°N    Lon=59.5553°W    Water depth=256'

Core Descriptions

<u>Hole-Core</u>	<u>SBD(ft.)</u>	<u>Strokes</u>	<u>Time</u>	<u>Length(in)</u>	<u>%Rec.</u>	<u>Core Description</u>
RGF 11-1	19.10		04:51	12.75"		5" fragments of various corals and marine crust, 7.75" oriented Diploria.
RGF 11-2	24.25		05:05	9"		9" fragments of various corals and marine crust.
RGF 11-3	28.88		05:25	13.5"		3" carbonate sand, 4" carbonate gravel, 4" rubble and fragements, 1.25" oriented A. palmata, 1.25" A. palmata.
RGF 11-4	34.10		06:15	10.75"		3 pieces oriented A. palmata (2" , 2.75" , 2.5" ), and 3.5" of coral rubble.



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 12 2/Dec/88 16:07AST Lat=13.0483°N Lon=59.5531°W Water depth=134'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 12-1	15		19:20	12"		3" D. stokesi, 4" cervicornis rubble, 5" cemented A. cervicornis rubble
RGF 12-2	20.25		19:30	9"		A. cervicornis rubble
RGF 12-3	29		20:00	12"		A. cervicornis rubble
RGF 12-4	34		20:20	24"		8" cervicornis rubble, 4" oriented A. palmata, 4" A. cervicornis rubble, 6" oriented A. palmata, 2" grey alteration crust
RGF 12-5	39.42		20:45	19"		7" A. cervicornis rubble 9" oriented A. palmata, 1" grey alteration crust, 2" oriented A. palmata
RGF 12-6	43.67		21:11	28"		6" A cervicornis rubble overlying 2" oriented A. palmata, 2" oriented marine crust, 4" oriented marine crust, 3" A. palmata and A. cervicornis rubble, 8" oriented A. palmata
RGF 12-7	45		21:50	24"		13" sand overlying 11" A. cervicornis rubble
RGF 12-8	49		22:00	24"		5" A. palamta rubble over 9" oriented A. palmata, over A. palmata and A. cervicornis rubble, 6" M. annualris, 2" marine crust\
RGF 12-9	54.09		23:15	23"		2" unoriented A. palmata, 2" A. palmata/A. cervicornis rubble, 3" oriented A. palmata, 3" oriented A. palmata, 6" oriented A. palmata, 7" oriented A. palmata



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 12 2/Dec/88 16:07AST Lat=13.0483°N Lon=59.5531°W Water depth=134'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 12-10	59.67		23:37	16"		4" M. annularis/A cervicornis rubble, 8" oriented A. palmata, 1" marine crust, 3" oriented A. palmata
RGF 12-11	60.38		00:30	12/3/88 31.50"		2" carbonate silt, 21.5" carbonate sand, 8" fragments and rubble.
RGF 12-12	63.94		00:41	12.75"		3.5" carbonate gravel, 9.25" oriented A. palmata.
RGF 12-13	66.38		01:05	31.50"		3" carbonate silt, 19" carbonate sand, 6.5" rubble, 3" oriented A. palmata.
RGF 12-14	69.52		01:35	17.75"		4" carbonate sand and gravel, 3.5" oriented A. palmata, 1.25" oriented marine crust, 2 pieces oriented A. palmata (4.5" and 4.5")
RGF 12-15	74.48		02:00	18.25"		1.5" oriented A. palmata, 5" marine crust and coral fragments and rubble, 2.75" oriented marine crust, 2 pieces oriented A. palmata (5.75" and 3.25").
RGF 12-16	79.42		02:45	19"		4" fragments of A. palmata, 2.25" oriented A. palmata, 3.5" fragments of A. palmata and sand, 2.5" oriented A. palmata, 6.75" oriented A. palmata.
RGF 12-17	82.10		03:15	22.75"		5" rubble and fragments of A. palmata, 3 pieces oriented A. palmata (4", 3.25", 1.25"), 4" rubble and fragments of A. palmata, 3.5" oriented A. palmata, 1.75" A. palmata (orientation unknown).
RGF 12-18	85.00		03:40	12"		6.5" fragments of marine crust and A. palmata, 3.75" oriented A. palmata, 1.75" unoriented A. palmata.



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 12 2/Dec/88 16:07AST Lat=13.0483°N Lon=59.5531°W Water depth=134'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 12-19	88.78		04:10	18.25"		5" fragments of coral and marine crust, 1" unoriented A. palmata, 3.25" oriented A. palmata, 5" fragments of coral and marine crust, 4" oriented A. palmata.
RGF 12-20	90.15		04:20	10.25"		2.25" marine crust, 2.5" fragments of marine crust and A. palmata, 5.5" oriented A. palmata.
RGF 12-21	92.17		04:50	46"		5" fragments of marine crust and A. palmata, 3 pieces oriented A. palmata (4.75", 2.75", 2.5"), 1.5" fragments of marine crust and A. palmata, 5 pieces of oriented A. palmata (fitting together) (8.5", 6", 3", 2", 10").
RGF 12-22	96.15		05:15	10.25"		7" fragments of A. palmata and marine crust, 3.25" oriented Agaricia (?).
RGF 12-23	103.00		05:55	12"		9" fragments of A. palmata and marine crust, and gravel, 3" oriented A. palmata.
RGF 12-24	105.67		06:10	4"		4" fragments of A. palmata and marine crust.
RGF 12-25	110.75		06:20	3"		3" fragments of A. palmata, marine crust, and A. cervicornis.
RGF 12-26	114.42		06:40	19"		9.5" carbonate sand, 8" fragments of A. palmata, 1.5" oriented M. annularis.
RGF 12-27	116.5		07:05	6"		6" fragments and coral rubble.





Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 12 2/Dec/88 16:07AST Lat=13.0483°N Lon=59.5531°W Water depth=134'

Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 12-28	118.65		07:30	28.25"		2" A. palmata and marine crust rubble, 26.25" oriented section of four A. palmata corals in a lithified reef sediment matrix (broken into 7 pieces - 3", 1", 9", 2.25", 4.75", 5", 1.25").
RGF 12-29	121.00		08:20	12"		8" A. palmata rubble and gravel, 4" oriented A. palmata.
RGF 12-30	123.17		08:55	34"		3" section of A. palmata and lithified sed. matrix fragments, 12.25" section of oriented A. palmata and A. cervicornis and lithified sed. matrix in 4 pieces (4", 2.25", 3.25", and 2.75"), 3.5" A. palmata and A. cervicornis fragments, 2.5" oriented A. cervicornis in lithified sed. matrix, 3.75" oriented A. palmata, 9" section of A. palmata and A. cervicornis fragments.
RGF 12-31	126.00		09:45	12"		5" A. cervicornis rubble, 3" oriented A. cervicornis, 4" A. cervicornis rubble.
RGF 12-32	130.25		10:05	21"		2" A. cervicornis rubble and fragments of lithified matrix, 2 sections of A. cervicornis in lithified matrix (6" and 3"), 10" A. cervicornis rubble and fragments of lithified matrix.
RGF 12-33	136.67		10:20	16"		9" A. cervicornis rubble and fragments of lithified matrix, 3.25" oriented A. cervicornis in lithified matrix, 3.75" A. cervicornis rubble and fragments of matrix.



# Barbados Offshore Drilling Program R/V Ranger Cruise 88-13

Hole=RGF 13 3/Dec/88 19:00 AST Lat=13.0367°N Lon=59.5476°W Water depth=269'

## Core Descriptions

<u>Hole-Core-Sample</u>	<u>SBD(ft.)</u>	<u>Strokes</u>	<u>Time</u>	<u>Length(in)</u>	<u>%Rec.</u>	<u>Sample Description</u>
RGF 13-1	30.83		2:10	50"		4" M. annularis fragments, 37.25" oriented M. annularis coral head (8 pieces) 8.75" oriented M. annularis (2 pieces).
RGF 13-2	38.21		2:35	21.5"		2.5" M.annularis fragments, 3" oriented M. annularis, 7" oriented M. annularis, 9" M. annularis.
RGF 13-3	54.42		3:05	7"		7" A. cervicornus rubble and coral fragments.
RGF 13-4	58.33		3:35	20"		10" coral rubble and fragments, 1.5" A. palmata, 2 pieces of oriented A. palmata (2.75" and 5.75").
RGF 13-5	60.83		4:00	14"		14" M. annularis and A. cervicornis rubble and fragments.
RGF 13-6	68.06		4:30	23.25"		3" coral fragments, 3" oriented M. annularis, 2" fragments of M. annularis, 2.5" oriented M. annularis, 3.5" fragments of M. annularis, 3 pieces of oriented M. annularis (3.5", 2.25", 2.25"), 1.25" M. annularis (orientation unknown).
RGF 13-7	72.19		5:00	33.75"		10" M. annularis fragments, 3 pieces oriented A. palmata (3.5", 6.75", 2.75"), 1.5" A. palmata fragments, 9.25" oriented A. palmata.
RGF 13-8	75.44		5:40	54.75"		9" rubble and fragments of M. annularis, 2 pieces oriented M. annularis (5.5" and 4.75"), 4" oriented A. palmata, 4" marine crust fragments, 4 pieces oriented A. palmata (3.25", 3.25", 4.25", 8.75"),



Barbados Offshore Drilling Program      R/V Ranger    Cruise 88-13  
Hole=RGF 13    3/Dec/88    19:00 AST    Lat=13.0367°N    Lon=59.5476°W    Water depth=269'

Core Descriptions

<u>Hole-Core-Sample</u>	<u>SBD(ft.)</u>	<u>Strokes</u>	<u>Time</u>	<u>Length(in)</u>	<u>%Rec.</u>	<u>Sample Description</u>
RGF 13-9	84.04		6:00	11.5"		4" marine crust fragments, 4" oriented M. annularis.
						9" coral fragments, 2.5" A. palmata.





# Barbados Offshore Drilling Program R/V Ranger Cruise 88-13

Hole=RGF 14 3 /Dec/88 19:00AST Lat=13.0367°N Lon=59.5476°W Water depth=269'

## Core Descriptions

<u>Hole-Core-Sample</u>	<u>SBD(ft.)</u>	<u>Strokes</u>	<u>Time</u>	<u>Length(in)</u>	<u>%Rec.</u>	<u>Sample Description</u>
RGF 14-1	33.67		11:00	16"		8" carbonate sand, 8" fragments and rubble of corals.
RGF 14-2	73.24		12:13	21"		12" carbonate sand, 5" Diploria rubble, 4" M. M. annularis rubble
RGF 14-3	77.92		12:30	25"		8" M. annularis frags and rubble, overlying 4", 5", 4", 4", oriented M. annularis
RGF 14-4	83.25		13:00	21"		4" Diploria frag and rubble, 7" oriented Diploria, 6" Diploria frags, 4" A. cervicornis rubble
RGF 14-5	88'		13:20	24"		4" sand, 2" marine crust/A. cervicornis rubble, 6" oriented M. annularis, 1" coral rubble, 9" (2", 3", 6") oriented M. annularis
RGF 14-6	94.92		13:30	1"		1" (4 pieces) rubble- M. annularis and A. cervicornis
RGF 14-7	96.25		14:00	13"		4" carbonate sand, 11" A, cervicornis rubble
RGF 14-8	98'		14:15	24"		11" A. cervicornis/ M. annularis rubble w/ gravel over 13" (6", 4", 3") oriented M. annularis
RGF 14-9	104.83'		13:20	2"		2" A. cervicornis/M. annularis rubble
RGF 14-10	114.75		14:10	3"		3" oriented A. palmata
RGF 14-11	124.75		16:34	3"		3" oriented A. palmata



## Barbados Offshore Drilling Program      R/V Ranger    Cruise 88-13

Hole=RGF 14    3 /Dec/88    19:00AST    Lat=13.0367°N    Lon=59.5476°W    Water depth=269'

### Core Descriptions

<u>Hole-Core-Sample</u>	<u>SBD(ft.)</u>	<u>Strokes</u>	<u>Time</u>	<u>Length(in)</u>	<u>%Rec.</u>	<u>Sample Description</u>
RGF 14-12	129.83		17:50	2"		2" (5 pieces) M. annularis rubble



# Barbados Offshore Drilling Program      R/V Ranger      Cruise 88-13

Hole=RGF 15    4/Dec/88    12:10AST    Lat=13.0366°N    Lon=59.5475°W    Water depth=248'

## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 15-1	18.33		0:45	12/5/88    44"		5" coral fragments, 2 pieces of oriented M. annularis (11" and 6"), 2.5" coral fragments, 5.5" oriented Agaricia, 14" oriented Diploria.
RGF 15-2	23.88		1:10	37.50"		7" coral fragments, 2.75" oriented Diploria, 6" oriented M. annularis, 21.75" oriented M. annularis (in 2 pieces).
RGF 15-3	29.98		1:25	24.25"		4.5" coral fragments, 19.75" oriented M. annularis (in 5 pieces).
RGF 15-4	36.83		1:40	2"		2" coral fragments (mostly M. annularis).
RGF 15-5	51.04		2:35	11.5"		3" M. annularis fragments, 4.25" oriented M. annularis, 4.25" rubble and oriented A. palmata.
RGF 15-6	56.25		2:50	9"		2 pieces of oriented A. palmata (2.25" and 2.25"), 4.5" M. annularis fragments.
RGF 15-7	71.33		3:35	8"		8" fragments of mostly M. annularis.
RGF 15-8	76.83		6:30	2"		2" oriented A. palmata.
RGF 15-9	84.65		7:30	11.75"		3 pieces oriented A. palmata (1.25", 3", 1.75"), 3.5" oriented crustose coralline algae, 2.25" oriented A. palmata.



# Barbados Offshore Drilling Program      R/V Ranger      Cruise 88-13

Hole=RGF 15    4/Dec/88    12:10AST    Lat=13.0366°N    Lon=59.5475°W    Water depth=248'

## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 15-10	85.63		7:30	16.5"		2" A. palmata fragments, 2 pieces A. palmata (2.5", 2.25"), 3" A. palmata (in 2 fragments), 4" A. palmata (in 3 fragments), 2.75" A. palmata.
RGF 15-11	89.15		10:25	10.25"		6" coral and marine crust fragments, 2.5" oriented A. palmata, 1.75" oriented grey marine crust.
RGF 15-12	90.19		10:55	21.75"		4" marine crust fragments, 6" oriented A. palmata, 3.5" oriented A. palmata (4 fragments), 5.25" oriented A. palmata (2 fragments), 3" oriented A. palmata.
RGF 15-13	95.27		11:15	20.75"		3.5" coral fragments, 1.75" oriented A. palmata, 2" fragments of marine crust and M. annularis, 5" oriented M. annularis, 4.5" fragments of coral, 4" oriented Diploria.
RGF 15-14	99.29		11:30	32.5"		6" coral rubble and fragments, 4 pieces of M. annularis (2.5", 3.5", 7.25", 8.25"), 1" Diploria fragments, 4" oriented Diploria.
RGF 15-15	103.98		11:50	36.25"		4.5" fragments of corals and marine crust, 4" oriented Diploria, 2" Diploria fragments, 4" fragment and rubble of marine crust, 3.5" oriented Diploria, 6" Diploria and other coral fragments, 3 pieces oriented M. annularis (4.25", 5.5", 2.5").





# Barbados Offshore Drilling Program R/V Ranger Cruise 88-13

Hole=RGF 16 6/Dec/88 05:30AST Lat=13.0472°N Lon=59.5517°W Water depth=129'

## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 16-1	8.92		8:20	12/6/88 13"		6" carbonate sand, 4" oriented lithified reef sediment, 3" fragments of lithified matrix.
RGF 16-2	14.42		8:42	7"		7" carbonate rubble and fragments.
RGF 16-3	19.04		8:50	11.5"		9" A. cervicornus rubble, 2.5" A. cervicornus in lithified reef sediment matrix.
RGF 16-4	23.5		9:30	18"		13" A. cervicornis rubble and gravel, 2.5" A. palmata (2 pieces), 2.5" oriented A. palmata.
RGF 16-5	26.88		10:10	13.5"		10" A. cervicornis rubble, 2.5" oriented A. palmata, 1" oriented A. palmata.
RGF 16-6	28.96		10:25	12.5"		9" A. cervicornis rubble, 3.5" oriented A. palmata.
RGF 16-7	30.73		10:55	15.25"		6" A. cervicornis rubble, 2.25" oriented A. palmata, 5.5" A. cervicornis rubble, 1.5" oriented A. palmata and marine crust.
RGF 16-8	32.21		11:10	21.5"		6" A. cervicornis rubble, 2.5" oriented A. palmata, 3.5" A. cervicornis rubble and A. palmata fragments, 3.5" oriented A. palmata, 6" A. cervicornis rubble and A. palmata fragments.
RGF 16-9	34.17		11:30	10"		10" A. cervicornis rubble.



# Barbados Offshore Drilling Program      R/V Ranger      Cruise 88-13

Hole=RGF 16    6/Dec/88    05:30AST    Lat=13.0472°N    Lon=59.5517°W    Water depth=129'

## Core Descriptions

Hole-Core	SBD(ft.)	Strokes	Time	Length(in)	%Rec.	Core Description
RGF 16-10	41.48		12:05	30.25"		9" A. cervicornis rubble, 3" oriented A. palmata, 4" A. cervicornis rubble, 3 pieces of oriented A. palmata (3.25", 4.25", 2.75"), 4" fragments of marine crust and A. palmata.
RGF 16-11	43.96		12:15	12.5"		6" A. cervicornis rubble, 1" oriented A. palmata, 4" A. palmata fragments, 1.5" oriented A. palmata.
RGF 16-12	47.4		13:10	31.25"		3.5" marine crust, 2.5", 2.5" oriented A. palmata, 7.25 A. palmata frags, 5", 4", 5.5" oriented A. palmata
RGF 16-13	50.38		13:35	19.5"		5" A. palmata rubble, 2.5", 4" oriented A. palmata, 3" marine crust, 5" oriented A. palmata



Sample Descriptions

Hole-Core-Sample	SBD (ft)*	Sample Description
		Hammer sampler
RGF 1-1-1	0-0.8' (Core top)	Carbonate sand
RGF 1-1-2	0.8-1.0'	Chunk of M. annularis, partially dissolved
RGF 1-1-3	1.0-1.5'	Carbonate sand
RGF 1-2-1	5.0-6.6'	Coarse grained carbonate sand and gravel
RGF 1-3-1	23.0-24.0	Carbonate sand and gravel
RGF 1-3-2	24.0-24.5	S. sidera
RGF 1-4-1	27.0-27.75	Carbonate sand
RGF 1-4-2	27'	Consolidated sand
RGF 1-5-1	28.5-28.75	Carbonate sand
RGF 1-5-2	28.75-29.0	S. sidera
RGF 1-5-3	29.0-29.25	Carbonate sand*
RGF 1-6-1	30.0-32.0	Carbonate gravel
RGF 1-7-1	40.0-40.25	Unoriented A. palmata

\* computed by subtracting sample length from SBD of each core provided by driller. Actual SBD of each core listed in core description.





Sample Descriptions

Hole-Core-Sample	SBD (ft)*	Sample Description
RGF 1-7-2	40.25-42.0	Carbonate gravel
RGF 1-8-1	44.0-46.0	Carbonate gravel
RGF 1-9-1	45.0-47.0	Carbonate gravel and coarse sand
RGF 1-10-1	45.0-47.0	Carbonate gravel and coarse sand
		NX drill string
RGF 1-11-1	48.0-48.2	Cemented carbonate sand-marine?
RGF 1-11-2	48.2-49.0	A. palmata and A. cervicornis rubble
RGF 1-12-1	50.0-51.0	A. palmata and A. cervicornis rubble
RGF 1-13-1	50.9-51.7	A. palmata and A. cervicornis rubble
RGF 1-13-2	51.7-52.1	Oriented A. palmata
RGF 1-14-1	56.0-56.3	A. palmata and A. cervicornis rubble
RGF 1-14-2	56.3-56.6	A. palmata filled with Mg-calcite cement
RGF 1-14-3	56.6-57.0	Oriented A. palmata



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 1 18/Nov/88 20:28AST Lat=13.0346°N Lon=59.5423°W Water depth=17

## Sample Descriptions

Hole-Core-Sample	SBD (ft)*	Sample Description
RGF 1-15-1	56.8-58.0	A. palmata and A. cervicornis rubble
RGF 1-16-1	59.4-60.0	A. cervicornis rubble
RGF 1-17-1	62.25-63.0	A. cervicornis rubble
RGF 1-17-2	63.0-63.15	Calcareous marine cement. Worm tubes, echinoid spines present
RGF 1-17-3	63.15-63.45	Oriented A. palmata
RGF 1-17-4	63.45-63.65	Oriented A. palmata
RGF 1-17-5	63.65-63.95	Oriented A. palmata
RGF 1-18-1	64.6-65.0	Chunks of A. cervicornis with calcareous marine cement
RGF 1-19-1	82.0-86.0 (?)	Calcareous sand



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 2 21/Nov/88 13:00AST Lat=13.0367°N Lon=59.5475°W Water depth=22

Sample Descriptions

<u>Hole-Core-Sample</u>	<u>SBD (ft)</u>	<u>Sample Description</u>
		Hammer sampler
RGF 2-1-1	0	Coralline algae with serpulid worms
RGF 2-2-1	0-1.25	15" calcareous sand
RGF 2-2-2	1.25-1.65	M. cavernosa (a few small pieces (<1"), a 2" piece, a 1.5" piece)



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 4 23/Nov/88 01:00AST Lat=13.0337°N Lon=59.5457°W Water depth=22

## Sample Descriptions

<u>Hole-Core-Sample</u>	<u>SBD (ft)</u>	<u>Sample Description</u>
		Hammer sampler
RGF 4-1-1	0'	18" sand, some cemented grey pieces
RGF 4-1-2	1.5'	4" M. annularis
RGF 4-2-1	11'	11" sand, some partially cemented grey pieces, some with orange coloring.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 5-1-1	14'-15'	12" poorly sorted coarse carbonate sand with a few pebble sized pieces of white marine crust mixed in.
RGF 5-1-2	15'-15'2"	2" piece of white marine crust
RGF 5-2-1	15'	poorly sorted calcareous gravel (M. annularis, A. cervicornis, mollusc and echinoid shells, white and grey marine crust) a few pebble sized pieces of unaltered coral.
RGF 5-2-2	15'	1" piece of grey marine crust with coral matrix. (borings, worm tubes, cemented sand)
RGF 5-3-1	18'-18'8"	8" moderately sorted coarse carbonate sand.
RGF 5-3-2	18'8"-19'7"	11" poorly sorted carbonate gravel (M. annularis, A. cervicornis, mollusc and echinoid shells, white and grey marine crust).
RGF 5-3-3	19'7"-19'10"	3" section of A. cervicornis rubble (pebble and cobble sized pieces of altered A. cervicornis with marine crust on each piece)
RGF 5-4-1	20'-22'3"	25" poorly sorted carbonate gravel and rubble - probably mostly fell in from walls of the hole (altered A. cervicornis, A. palmata, mollusc and echinoid shells, white and grey marine crust)
RGF 5-4-2	21'6"	2" piece of unoriented A. palmata, separated from rubble (unaltered with fresh cuts)
RGF 5-4-3	20'9"	1/2" piece of unoriented A. palmata, separated from rubble (unaltered with fresh cuts)
RGF 5-5-1	20'-21'5"	17" section of coarsening downward sand and gravel. Gravel has A. cervicornis, A. palmata, mollusc and echinoid shells, white and grey marine crust.
RGF 5-5-2	21'5"-22'3"	8" A. cervicornis rubble in partially lithified calcareous cement. Cement matrix is poorly sorted light grey fine grained sand and silt. A. cervicornis is mostly altered with marine crust on each piece. This section is probably



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
		in place, since the material above may be fall-in, then the true SBD for this sample is probably close to 20'.
RGF 5-6-1	21'-22'5"	25" poorly sorted coarse carbonate sand and some gravel.
RGF 5-6-2	21'7"-21'11"	Separated from rest of core - Poorly sorted A. cervicornis and A. palmata gravel with A few large pebble size pieces of unaltered A. palmata.
RGF 5-7-1	23'-24'2"	16" poorly sorted coarse carbonate sand and some gravel.
RGF 5-7-2	24'2"-24'10"	6" poorly sorted gravel and rubble (A. palmata, A.cervicornis, Diploria, grey and white marine crust)
RGF 5-7-3	24'10"-25'3"	5" A. cervicornis and A. palmata rubble in partially lithified calcareous cement. Same as sample RGF 5-5-2. True sample depth is probably close to 23'.
RGF 5-8-1	25'-26'3"	15" poorly sorted coarse carbonate sand and some gravel.
RGF 5-8-2	26'3"-27'6"8	15" poorly sorted gravel and rubble (A. palmata, A. cervicornis, M. annularis, Diploria, cobble size pieces of grey marine crust, and consolidated carb. sand)
RGF 5-8-3	26'3"-27'6"	unaltered unoriented pebble size pieces of A. palmata separated from the gravel.
RGF 5-9-1	26'-26'5"	4" moderately sorted coarse carbonate sand.
RGF 5-9-2	26'5"-27'3"	11" poorly sorted rubble (A. palmata, A. cervicornis, M. annularis, white and grey marine crust)
RGF 5-9-3	27'3"-28'1"	10" section of pebble size pieces of A. palamata and A. cervicornis in partially lithified carbonate silt and sand matrix. Same as sample RGF 5-5-2 and RGF 5-7-3. True sample depth is probably close to 26'.
RGF 5-9-4	28'1"	single piece of unaltered A. palmata from bottom of core.
RGF 5-9-5	26'5"-27'3"	Separated M. annualris and A. palmata from rubble.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 5-10-1	27'-27'6"	6" section of poorly sorted coarse carbonate sand
RGF 5-10-2	27'6"-29'	18" section of poorly sorted carbonate rubble and gravel (A. palmata, A. cervicornis, M. annularis, white and grey marine crust)
RGF 5-11-1	28'-30'	24" section of poorly sorted coarse carbonate sand. Slight coarsening downwards.
RGF 5-12-1	29'-31'	24" section of poorly sorted coarse carbonate sand. Slight coarsening downwards. A few pebble size pieces of A. palmata, A. cervicornis and marine crust.
RGF 5-13-1	34'-34'6"	6" section of poorly sorted coarse carbonate sand.
RGF 5-13-2	34'6"-36'	18" section of poorly sorted gravel and rubble. A few pebble size pieces of A. palmata, A. cervicornis and marine crust.
Switch to NX drilling - first NX core at 1:00 11/24/88		
RGF 5-14-1	36'-36'6"	6" of gravel and rubble. A. cervicornis, A. palmata, marine crust.
RGF 5-14-2	36'6"-37'	6" of rubble. Mostly marine crust with some A. palmata (altered and unaltered)
RGF 5-14-3	36'-37'	unaltered pieces of A. palmata and possibly A. cervicornis separated from rest of core.
RGF 5-15-1	38'-41'	5" of rubble. A. palmata and marine crust.
RGF 5-15-2	38'-41'	unaltered pieces of A. palmata separated from rest of core.





Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 6 23/Nov/88 06:27AST Lat=13.0337°N Lon=59.5457°W Water depth=22

## Sample Descriptions

<u>Hole-Core-Sample</u>	<u>SBD (ft)</u>	<u>Sample Description</u>
		NX drill string
RGF 6-1-1	7.8'	5" rubble, w/ M. annularis, M. cavernosa
RGF 6-1-2	8.2'	1" piece M. annularis
RGF 6-1-3	8.3'	2" piece M. annularis
RGF 6-1-4	8.6'	2.5" piece M. annularis
RGF 6-1-5	8.7'	4" piece M. annularis



**Sample Descriptions**

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 7-1-1	3'	M. cavernosa- 1", 4 small<.5",
RGF 7-1-2	3.1'	7" oriented M. cavernosa
RGF 7-1-3	3.75'	3" oriented M. cavernosa
RGF 7-2-1	5'	M. cavernosa- 2", 2.25"
RGF 7-3-1	18.3'	coral rubble, including 3 large M. cavernosa pieces (orientation unknown) and one 2" piece of Diploria from middle of core interval
RGF 7-3-2	18.6	2 pieces of encrusted coral frags and cemented sand
RGF 7-3-3	19.3'	7.5" oriented M. cavernosa
RGF 7-3-4	19.9	2" cemented sand, w/ M. cavernosa piece (fits directly above 7-3-5)
RGF 7-3-5	20.1	4.5" oriented M. cavernosa piece
RGF 7-3-5	20.5	3.5" oriented A. palmata piece
RGF 7-4-1	24.2'	8" coral rubble, including A. cervicornis, M. annularis, diploria
RGF 7-4-2	24.95	9.5" oriented P. asteroides over 2" oriented A. palmata (fit together)
RGF 7-4-3	25.7	4.5" cemented sand and coral rubble, probably A. palmata
RGF 7-5-1	26.3	5" coral rubble, mostly A. palmata, 3 pieces Diploria
RGF 7-5-2	26.7	2.5" A. palmata, w' mollusks in cavities
RGF 7-5-3	26.7	2" A. palmata, w' molluscs in cavities
RGF 7-5-4	26.7	2" A. palmata, w' molluscs in cavities
RGF 7-5-5	27.2	5" oriented A. palmata w/ mollusc in cavity
RGF 7-5-6	27.9	8" A. palmata rubble



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 7-6-1	29.7	6" rubble, including molluscs, coral, cemented sand, piece of Millepora complanata
RGF 7-6-2	30.2'	1.5" A. palmata
RGF 7-6-3	30.4	1" A. palmata
RGF 7-6-4	30.5	1" A. palmata
RGF 7-6-5	30.6	2" A. palmata
RGF 7-6-6	30.8'	1" A. palmata
RGF 7-7-1	32.5	2" oriented A. palmata
RGF 7-7-2	32.7	2" oriented A. palmata
RGF 7-7-3	32.9	2" oriented A. palmata
RGF 7-7-4	33	3" and 1" oriented A. palmata 1" fits below 3" piece
RGF 7-7-5	33.3	1" oriented A. palmata
RGF 7-7-6	33.4	1" oriented A. palmata
RGF 7-7-7	33.5	1.5" oriented A. palmata
RGF 7-8-1	34'	3" A. palmata rubble
RGF 7-8-2	34.25	1" oriented A. palmata
RGF 7-8-3	34.3	Two A. palmata fragments of unknown orientation (1" apiece)
RGF 7-8-4	34.4	Two A. palmata fragments, upper one is 1", lower .5"
RGF 7-8-5	34.5	2" A. palmata rubble
RGF 7-9-1	36.4	0.5" marine cement
RGF 7-9-2	36.45	0.5" A. palmata frags
RGF 7-9-3	36.5	2" A. palmata piece



## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 7-9-4	36.7	5" A. palmata rubble
RGF 7-9-5	37.1	4" oriented A. palmata
RGF 7-9-6	37.4	7" oriented A. palmata (same coral as RGF 7-10-2, upper part fit together)
RGF 7-10-1	39.3	3" highly encrusted A. palmata rubble (definitely cave-in)
RGF 7-10-2	39.55	8" oriented A. palmata (same coral as RGF 7-9-6, lower part fit together)
RGF 7-10-3	40.3	9" oriented A. palmata (scallop shell in cavity)
RGF 7-11-1	42.5	4.5" section of A. palmata rubble with dark grey alteration surfaces over crustose coralline algae. Orientation known on some pieces.
RGF 7-11-2	42.9	6.5" oriented A. palmata with mollusc borings and in place mollusc shell in cavity. Dark grey alteration surfaces over crustose coralline algae.
RGF 7-11-3	43.45	2.25" oriented A. palmata with mollusc borings and dark grey alteration surfaces over crustose coralline algae.
RGF 7-11-4	43.65	3" section of A. palmata rubble with dark grey alteration surfaces over crustose coralline algae.
RGF 7-11-5	43.90	1.25" oriented A. palmata with dark grey alteration surfaces over crustose coralline algae.
RGF 7-12-1	49.83	1" section of A. palmata fragments (fresh fracture surfaces)
RGF 7-12-2	49.92	9.25" oriented A. palmata with mollusc borings and one in place mollusc shell, dark grey alteration surfaces.
RGF 7-12-3	50.69	3.75" oriented A. palmata with mollusc borings and dark grey alteration surfaces.
RGF 7-13-1	54.60	4" oriented A. palmata with dark grey alteration surfaces over crustose coralline algae.





**Sample Descriptions**

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 7-13-2	54.95	4" section of A. palmata rubble with dark grey alteration surfaces over crustose coralline algae on each piece. Mostly altered.
RGF 7-13-3	55.27	3" oriented A. palmata with mollusc borings and dark grey alteration surfaces over crustose coralline algae.
RGF 7-13-4	55.52	1" section of weathered A. palmata and A. cervicornis rubble with dark grey alteration surfaces over crustose coralline algae on each piece.
RGF 7-13-5	55.60	2.75" oriented A. palmata with mollusc borings and dark grey alteration surfaces over crustose coralline algae.
RGF 7-13-6	55.83	2" oriented A. palmata with mollusc borings and dark grey alteration surfaces over crustose coralline algae.
RGF 7-14-1	58.42	9.5" section of A. palmata rubble with dark grey alteration surfaces over crustose coralline algae on each piece (~50% alteration)
RGF 7-14-2	59.21	3.5" oriented A. palmata with pholad mollusc borings and in place pholad mollusc shell. Dark grey alteration surfaces over crustose coralline algae.
RGF 7-15-1	60.25	9" section of A. palmata rubble and fragments. Dark grey alteration surfaces over crustose coralline algae on most pieces, and fragments with fresh surfaces.
RGF 7-16-1	64.42	6" section of gravel made up of fresh and subaerially altered pieces of A. palmata, crustose coralline algae, and gastropod shells.
RGF 7-16-2	64.92	3" oriented A. palmata with small borings and dark grey alteration surfaces over crustose coralline algae.
RGF 7-16-3	65.08	2" oriented A. palmata with mollusc borings and dark grey alteration surfaces over crustose coralline algae.
RGF 7-16-4	65.33	3" section of fragments of fresh and altered A. palmata with dark grey alteration surfaces over crustose coralline algae.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 7-16-5	65.58	1.5" oriented A. palmata with dark grey alteration surfaces over crustose coralline algae.
RGF 7-16-6	65.71	3.5" oriented A. palmata with small borings and dark grey alteration surfaces.
RGF 7-17-1	68.42	7" section of A. palmata rubble: some fragments have fresh surfaces, and some have dark grey alteration surfaces (~50% altered).
RGF 7-18-1	70.85	1.75" oriented A. palmata with dark grey alteration surfaces and crustose coralline algae.
RGF 7-19-1	74.54	1.5" oriented A. palmata with dark grey alteration surfaces over crustose coralline algae. One surface has unlithified grey well sorted silt (possibly this is what makes up some of the matrix)
RGF 7-19-2	74.67	5" section of A. palmata and A. cervicornis rubble. Some pieces have freshly broken surfaces, but most have grey marine crust overlying dark grey alteration surfaces overlying crustose coralline algae. (~50% alteration)
RGF 7-19-3	75.08	4.5" oriented A. palmata with grey marine crust overlying dark grey alteration surfaces overlying crustose coralline algae.
RGF 7-19-4	75.46	4" section of A. palmata and A. cervicornis rubble like sample 7-19-2 but with greater % of A. cervicornis and more alteration (~90%)
RGF 7-19-5	75.79	2.5" oriented A. palmata heavily altered (90%) with grey marine crust over thick dark grey alteration surfaces over crustose coralline algae.
RGF 7-20-1	80.29	2.5" A. palmata (orientation unknown). Thick alteration layer with a little grey marine crust on top.
RGF 7-20-2	80.5	6" section of A. palmata and A. cervicornis rubble. (Mostly A. cervicornis). Light grey to grey marine crust on top of dark grey alteration surfaces. Inner part of A. cervicornis stems still unaltered.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 7-21-1	85.42	7" section of <i>A. cervicornis</i> rubble with a few pieces of <i>A. palmata</i> , and a piece <i>Millepora complanata</i> Dark grey alteration surfaces with light grey marine crust on top. Inner part of the <i>A. cervicornis</i> stems are unaltered.
RGF 7-22-1	87.33	8" section of <i>A. cervicornis</i> rubble with a few pieces of <i>A. palmata</i> and 3 pieces <i>M. annularis</i> . Light grey marine crust over dark grey alteration surfaces. Some freshly cut surfaces as well.
RGF 7-23-1	89.17	6" section of <i>A. cervicornis</i> and <i>A. palmata</i> rubble with dark grey alteration surfaces overlain by white to light grey marine crust. Inner stems of <i>A. cervicornis</i> are unaltered. (~30% alteration). Some fragments of <i>A. palmata</i> have fresh surfaces.
RGF 7-23-2	89.67	6.25" oriented <i>A. palmata</i> in 3 pieces. Crustose coralline algae coats dark grey alteration surfaces.
RGF 7-23-3	90.19	2.25" oriented <i>A. palmata</i> with crustose coralline algae coating dark grey alteration surfaces. May be part of overlying piece (7-23-2).
RGF 7-23-4	90.38	5.5" oriented <i>A. palmata</i> with white to light grey marine crust coating dark grey alteration surfaces.
RGF 7-23-5	90.84	2" <i>A. cervicornis</i> and <i>A. palmata</i> rubble with white and grey marine crust coating dark grey alteration surfaces (~20% alteration). Some <i>A. palmata</i> pieces have freshly broken surfaces. Inner part of <i>A. cervicornis</i> stems are unaltered. A little bit of moderately sorted light grey silt matrix.
RGF 7-24-1	92.58	5" section of <i>A. cervicornis</i> and <i>A. palmata</i> rubble. Some fresh surfaces on <i>A. palmata</i> fragments, but most have light grey marine crust coating dark grey alteration surface. (~20% alteration)
RGF 7-25-1	93.08	5" section of <i>A. cervicornis</i> rubble with a few fragments of <i>A. palmata</i> (with fresh surfaces). Dark grey alteration surfaces on some pieces, coated by white and light grey marine crust.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 7-25-2	93.50	3" oriented A. palmata with crustose coralline algae coated over by light grey marine crust.
RGF 7-25-3	93.75	3" oriented A. palmata with crustose coralline algae coated over by light grey marine crust.
RGF 7-26-1	94.38	4" section of A. cervicornis rubble with fragments of A. palmata and M. annularis with fresh surfaces. Grey alteration surface on some pieces, coated by white and light grey marine crust. Inner part of A. cervicornis stems unaltered.
RGF 7-26-2	94.71	5" oriented A. palmata with light grey marine crust on one surface.
RGF 7-26-3	95.13	5" oriented A. palmata with light grey marine crust coating grey alteration surface overlying crustose coralline algae. Some small borings.
RGF 7-26-4	95.54	2.25" oriented A. palmata with light grey marine crust coating grey alteration surface overlying crustose coralline algae. Some large borings.
RGF 7-26-5	95.73	1" section made up of 2 pieces of A. palmata with borings and light grey to grey marine crust.
RGF 7-26-6	95.81	2.25" oriented A. palmata with large borings and light grey marine crust coating grey alteration surface overlying crustose coralline algae.
RGF 7-27-1	99.27	5" section of A. cervicornis rubble with a few pieces of A. palmata. Grey alteration surface on some pieces, coated by white and light grey marine crust. Inner part of A. cervicornis stems unaltered.
RGF 7-27-2	99.69	2.75" oriented A. palmata with borings and an in-place pholad mollusc shell. Dark grey alteration surfaces coated by grey marine crust.
RGF 7-27-3	99.92	1.5" section of A. palmata fragments with a few pieces of A. cervicornis. Grey alteration surface on some pieces, coated by white and light grey marine crust.
RGF 7-27-4	100.04	4" oriented A. palmata with white and grey marine crust.





## Sample Descriptions

<u>Hole-Core-Sample</u>	<u>SBD (ft)</u>	<u>Sample Description</u>
RGF 7-27-5	100.37	2" section of A. palmata fragments with a few pieces of A. cervicornis. Grey alteration surface on some pieces, coated by white and light grey marine crust.
RGF 7-27-6	100.54	5.5" oriented A. palmata with lots of light grey and crustose coralline algae on surfaces and filling in borings. Abundant sediment (containing Halimeda) cemented together and onto coral.
RGF 7-28-1	104.75	15" A. cervicornis and A. palmata rubble with fresh fragments of A. palmata and A. cervicornis that are unaltered except for a dark grey alteration surface coated by light grey to grey marine crust on some of the pieces.
RGF 7-28-2	104.75	3 A. palmata fragments with cemented sediment attached (containing Halimeda) separated from the rubble.
RGF 7-29-1	109.67	4" section of A. cervicornis rubble with a few fragments of A. palmata and 1 piece M. complanata. The pieces are very fresh looking, with a little bit of grey and light grey marine crust.



Sample Descriptions

<u>Hole-Core-Sample</u>	<u>SBD (ft)</u>	<u>Sample Description</u>
RGF 8-1-1	14.40	4" section of rubble with freshly fractured pieces of <i>Siderastrea siderea</i> , mollusc shells, <i>M. cavernosa</i> , <i>Millepora</i> and <i>Diploria</i> . One 2" piece of <i>Siderastrea siderea</i> .
RGF 8-1-2	14.73	3.25" oriented <i>Diploria</i> with grey alteration surfaces & extensive beige infill.
RGF 8-2-1	18.85	4" section of rubble with 7 pieces highly altered grey <i>Diploria</i> and 2 freshly fractured pieces of <i>Diploria</i> , and 2 pieces of altered <i>Porites astreoides</i> with borings and a pholad mollusc.
RGF 8-2-2	19.07	2.75" oriented fresh <i>M. annularis</i> with grey and beige alteration surface and 2 smaller unaltered fragments of same coral
RGF 8-2-3	19.54	1.5" section of 2 fragments, a 1" grey altered unidentified coral and .5" <i>Millepora</i>
RGF 8-2-4	19.63	4.5" oriented <i>Dictheoena stokesi</i> and 5" fragment of same coral. Both have cement infilled borings and skeletal porosity
RGF 8-3-1	23.08	3.5" section of 12 fragments: 4 pieces of highly infilled <i>Diploria</i> , 2 pieces of <i>Millepora</i> , 1 piece <i>Porites astreoides</i> , 1 piece <i>Isophyllia</i> , 1 piece <i>Stephanocoenia michelini</i> and 3 unidentified corals. Fragments are mostly highly altered (d. grey and light grey). Borings on some pieces.
RGF 8-3-2	23.38	5.75" oriented <i>D. stokesi</i> with dark grey and brown alteration surfaces. Infilled borings and beige cement infill of skeletal porosity
RGF 8-3-3	23.85	3" section of 4 highly Fe-stained <i>A. cervicornis</i> , 4 <i>Diploria</i> w/ extensive cement infill, 2 <i>S. siderea</i> , and 8 unknown rubble w/ highly Fe-stained dark grey surfaces.
RGF 8-3-4	24.10	1.5" oriented <i>D. stokesi</i> w/ serpulid worms on top. Beige cement infilling and dark grey alteration surfaces.



Sample Descriptions

<u>Hole-Core-Sample</u>	<u>SBD (ft)</u>	<u>Sample Description</u>
RGF 8-3-5	24.23	2.75" of 3 cemented fragments of coral rubble: top to bottom: sml Diploria, sml M annularis (?), lrg Diploria, extensive beige infilling and dark grey alteration surfaces.
RGF 8-3-6	24.45	6.5" oriented S. siderea. Mollusc shells cemented into cavities. Borings, heavily altered (d. grey), cement infilled borings extensive beige cement infilling skeletal porosity
RGF 8-4-1	26.94	7" coral rubble that is altered with borings and dark grey alteration surfaces: 13 mollusks, 9 Diploria, 4 Millepora, 3 S. siderea, 2 A. cervicornis, 2 M. annularis, 2 P. astroides, 1 Agaricia, 2 large (1.5") unknown coral rubble, 5 (1") unknown dark grey crust pieces, 20 unknown sml coral and crust rubble.
RGF 8-4-2	27.52	3.75" oriented A. palmata with dark grey alteration surfaces, pholad borings, common serpulids, minor crustose coralline algae, extensive beige cement infill in skeletal pores.
RGF 8-4-3	27.83	3.5" oriented S. siderea with extensive grey and dark grey alteration surfaces, many serpulids on bottom, moderately thick cement crust, highly Fe-stained and extensive well-developed cement infill rim. Beige cement common w/in skeletal pores. 2 pholad borings infilled by cement
RGF 8-4-4	28.12	6.5" oriented S. siderea with dark grey alteration surfaces, common serpulid worms on bottom. Some borings w/ partial cement infill (geopetal). This piece is less infilled by beige cement than overlying piece of another S. siderea
RGF 8-4-5	28.66	4.5" oriented D. stokesis with dark grey alteration surfaces, some beige to white infillings, few serpulids. Nicely preserved corallites exposed on surface of coral.
RGF 8-4-6	29.04	3.5" oriented A. palmata, with many pholad borings, & half a pholad mollusc shell, dark grey alteration surfaces w/ many serpulid worms on bot. Partial cement infill of borings and extensive beige cement & grey infill rims.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-4-7	29.32	5" of coral rubble with one 2" piece of cemented <i>A. cervicornis</i> , 2 (1.5") <i>A. cervicornis</i> fragments, 3 (1") <i>A. cervicornis</i> fragments, 5 (.5") <i>A. cervicornis</i> fragments, 2 small fragments of <i>S. siderea</i> , one entire gastropod, 1 (1.5") fragment of marine cement crust, 2 (1") crusts and 12 smaller crust fragments. All crust pieces are cut fragments, not rubble. Dark grey to light grey alteration surfaces and infilled cavities (extensive alteration).
RGF 8-4-8	29.74	3" oriented <i>A. palmata</i> with numerous borings, parts of pholad mollusc shells, dark grey alteration surfaces. Partially infilled borings. Some serpulids on bottom. Cement infill rim. Some beige cement infill of skeletal porosity and partial cement infill of borings.
RGF 8-5-1	31.85	5" section of rubble with 16 <i>Diploria</i> fragments (1 is 2", 10 are .5") with interior fragments and coral surface fragments, 3 <i>P. astreoides</i> with thin dark grey altered surface, a 1" <i>A. palmata</i> rubble with grey cement crust with <i>H. rubrum</i> and extensive beige cement infill, 1 small <i>A. cervicornis</i> .5" X .3" diameter with dark grey alteration surface, 1 (.5") and two smaller <i>Millepora</i> fragments, 2 mollusc fragments, and 3 dark grey exposure crust/rubble and 9 grey and beige coral crust fragments (freshly broken). Dark grey alteration surfaces and extensive beige cement infill of nearly all pieces.
RGF 8-5-2	32.27	3.25" oriented <i>A. palmata</i> with numerous pholad borings, some borings partially infilled by cement, grey alteration surface and cement crust with <i>Homotrema rubrum</i> . Well developed grey cement infill rim.
RGF 8-5-3	32.54	3" section including one 2.25" unoriented <i>A. palmata</i> piece with numerous pholad borings, dark alteration surface and thick cement crust with <i>H. rubrum</i> throughout, overlying thin crustose coralline algae. Extensive infill of beige cement within skeletal porosity. Two broken fragments (1") of thick cement crust with <i>H. rubrum</i> and thin coralline algae, and .5" fragment of coral cement crust and some <i>A. palmata</i> , with serpulids on dark grey alteration surface.
RGF 8-5-4	32.79	5.75" oriented <i>A. palmata</i> (2 branches fused together) with numerous pholad borings (some partially infilled by





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
		geopetal beige cement) grey alteration surfaces with marine cement crust, incorporating <i>H. rubrum</i> and some serpulids, and overlying thin crustose coralline algae. Fused contact between 2 <i>A. palmata</i> has moderately thick coralline algae containing common vermitids. Thin cement infill rim.
RGF 8-5-5	33.27	6.25" oriented <i>A. palmata</i> with borings (some partially infilled) dark grey alteration surfaces, and light grey marine crust.
RGF 8-5-6	33.79	1" oriented <i>A. palmata</i> with dark grey alteration surface coated with crustose coralline algae.
RGF 8-5-7	33.87	2.5" coral rubble with <i>A. palmata</i> and <i>A. cervicornis</i> . Dark grey alteration surfaces on each piece.
RGF 8-5-8	34.08	3.5" oriented <i>A. palmata</i> with borings, pieces of pholad mollusc shells, partially infilled borings and cavities and dark grey alteration surfaces coated with crustose coralline algae.
RGF 8-5-9	34.38	5" oriented <i>A. palmata</i> with thick dark grey alteration surfaces and a bit of grey marine crust and crustose coralline algae. Borings, pholad mollusc shells, and partially infilled borings and cavities.
RGF 8-5-10	34.79	2.5" section made up of 3 pieces of <i>A. palmata</i> including one oriented 1.5" piece. Dark grey alteration surfaces overlying crustose coralline algae layer. Borings are partially infilled.
RGF 8-6-1	38.71	1.5" oriented <i>A. palmata</i> with borings, a layer of crustose coralline algae overlain by a dark grey alteration surface coated by brown/grey marine crust.
RGF 8-6-2	38.83	2" <i>A. palmata</i> rubble with dark grey alteration surfaces on each piece.
RGF 8-6-3	39.00	3.25" oriented <i>A. palmata</i> with borings, dark grey alteration surfaces coated by some light grey marine crust and crustose coralline algae.
RGF 8-6-4	39.27	2.5" oriented <i>A. palmata</i> with borings, pholad molluscs, crustose coralline algae overlain by dark grey alteration surface overlain by grey marine crust.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-6-5	39.48	3.5" section of A. palmata fragments. Dark alteration surfaces coated in some places by light grey marine crust.
RGF 8-6-6	39.77	3.75" oriented A. palmata with borings and grey alteration surfaces coated by crustose coralline algae.
RGF 8-7-1	42.67	2" section of A. cervicornis and A. palmata fragments. Some fresh surfaces on the A. palmata pieces, but most surfaces are dark grey alteration surfaces. A. cervicornis still unaltered in the inner part of the stems.
RGF 8-7-2	42.83	1.75" A. palmata (orientation unknown) with crustose coralline algae under a dark grey alteration layer coated by brownish marine crust.
RGF 8-7-3	42.98	3.75" oriented A. palmata with dark grey alteration surfaces coated with grey marine crust. Some infilling of cavities.
RGF 8-7-4	43.29	1.5" section of A. palmata fragments with light grey crustose coralline algae.
RGF 8-7-5	43.42	3.5" oriented A. palmata with borings and dark grey alteration surfaces coated with grey marine crust. Some infilling of cavities.
RGF 8-7-6	43.71	3.25" oriented A. palmata with borings and partially infilled cavities. Dark grey alteration surfaces coated by grey marine crust and crustose coralline algae.
RGF 8-7-7	43.98	3.25" oriented A. palmata with borings and partially infilled cavities. Dark grey alteration surfaces coated by grey marine crust and crustose coralline algae.
RGF 8-7-8	44.25	3.5" oriented A. palmata with borings, pholad mullosc shells, and partially infilled cavities. Dark grey alteration surfaces coated by grey marine crust and crustose coralline algae.
RGF 8-7-9	44.54	4.5" oriented A. palmata with borings and partially infilled cavities. Dark grey alteration surfaces coated by grey marine crust and crustose coralline algae.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-7-10	44.92	1" A. palmata fragments with dark grey alteration surfaces and some fresh surfaces.
RGF 8-8-1	47.54	1.25" oriented A. palmata with small borings. Layer of crustose coralline algae under a dark grey alteration layer, coated by brownish grey marine crust. Partially infilled.
RGF 8-8-2	47.65	3" section of A. palmata rubble with Millepora. Dark alteration surfaces.
RGF 8-8-3	47.90	3.25" oriented A. palmata with dark grey alteration surface coated with some crustose coralline algae and grey marine crust. Infilled borings and cavities.
RGF 8-8-4	48.17	2" oriented A. palmata with dark grey alteration surface coated with some crustose coralline algae and grey marine crust. Infilled borings and cavities.
RGF 8-8-5	48.33	2.25" oriented A. palmata with dark grey alteration surface coated with some crustose coralline algae and grey marine crust. Infilled borings and cavities.
RGF 8-8-6	48.52	2.5" section of A. palmata rubble with Millepora. Dark alteration surfaces.
RGF 8-8-7	48.73	1.75" oriented A. palmata with borings and partially infilled cavities. Crustose coralline algae layer overlain by dark grey alteration layer.
RGF 8-8-8	48.88	1.5" oriented A. palmata with infilled cavities. Crustose coralline algae layer overlain by dark grey alteration layer overlain by grey marine crust.
RGF 8-9-1	49.5	6" section of A. palmata and A. cervicornis rubble. Light and dark grey alteration layers, infilled cavities. A. cervicornis stems are altered all the way through.
RGF 8-10-1	50.0	4.5" section of A. palmata rubble with a few pieces of A. cervicornis and Millepora. Dark grey alteration surfaces on all pieces (~90% alteration).





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-10-2	50.38	7.5" oriented A. palmata in 3 pieces and some fragments. Partially infilled borings and cavities but cleaner than most A. palmata samples higher up in section. Dark grey and grey alteration surfaces coated with some crustose coralline algae and light grey marine crust.
RGF 8-11-1	53.46	6" A. palmata rubble with A. cervicornis and Millepora. Dark alteration surfaces coated with grey marine crust on some pieces, some have fresh surfaces.
RGF 8-11-2	53.96	8.5" oriented A. palmata (fresher looking than any A. palmata samples in above section). Borings with part of pholad mollusc shell. Partial infillings of borings. Some crustose coralline algae and grey marine crust.
RGF 8-11-3	54.67	4" section of highly altered A. palmata fragments. (2.25" fragment is oriented). Crustose coralline algae under dark alteration layer. Thick grey marine crust on outer surface. Infilled borings and cavities.
RGF 8-12-1	57.5'	7.5" calcareous sand.
RGF 8-12-2	56.13'	4" calcareous sand w/ A. cervicornis and A. palmata rubble w/ grey alteration surfaces
RGF 8-12-3	56.46'	3" oriented A. palmata w/ grey alteration surfaces
RGF 8-12-4	56.71'	2 altered A. cervicornis pieces (total length about 1")
RGF 8-12-5	56.79'	2" oriented A. palmata w/ grey alteration surface
RGF 8-13-1	61.0	5.5" A. palmata rubble, some pieces have freshly cut surfaces, all have grey alteration surfaces
RGF 8-13-2	61.46	3" oriented A. palmata w/ grey alteration surfaces
RGF 8-13-3	61.71	2" A. palmata rubble w/ grey alteration surfaces
RGF 8-13-4	61.88	5.5" oriented A. palmata w/ grey alteration surfaces
RGF 8-13-5	62.33	4" A. palmata pieces, 2 pieces w/ freshly cut surfaces, all have grey alteration surfaces





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-13-6	62.67	4" oriented A. palmata w/ grey alteration surfaces
RGF 8-14-1	59.92	52" calcareous sand, almost certainly cave-in (too shallow)
RGF 8-14-2	64.25	3" A. palmata pieces w/ grey alteration surfaces
RGF 8-14-3	64.5	2" oriented A. palmata
RGF 8-14-4	64.67	4" A. palmata pieces w/ grey alteration surfaces, orientation unknown
RGF 8-15-1	66.04	41.5" calcareous and, possibly cave-in
RGF 8-15-2	69.50	2" highly encrusted M. annularis (?) w/ grey alteration surfaces, crustose coralline algae, worms
RGF 8-15-3	69.67	4" highly altered coral rubble (unidentified corals)
RGF 8-16-1	68.58	5" grey altered unidentified coral rubble
RGF 8-16-1	69.00	2 unoriented pieces A. palmata w/ calcite infill (total 1")
RGF 8-16-3	69.08	5" grey altered coral rubble, mostly unidentified, some M. annularis, grey alteration surfaces
RGF 8-16-4	69.50	3.5" oriented encrusted M. annularis w/ calcite cement w/ grey alteration surfaces
RGF 8-16-5	69.79	4" oriented encrusted M. annularis w/grey alteration surfaces
RGF 8-16-6	70.04	5" oriented encrusted M. annularis w/grey alteration surfaces
RGF 8-16-7	70.46	4" oriented encrusted M. annularis w/ Mg-calcite cement also a few loose cemented fragments
RGF 8-16-8	70.79	7" oriented fresh M. annularis, w/ bores, a little Mg-calcite cement and a mollusk shell (in place), also a few loose cemented fragments.



Sample Descriptions

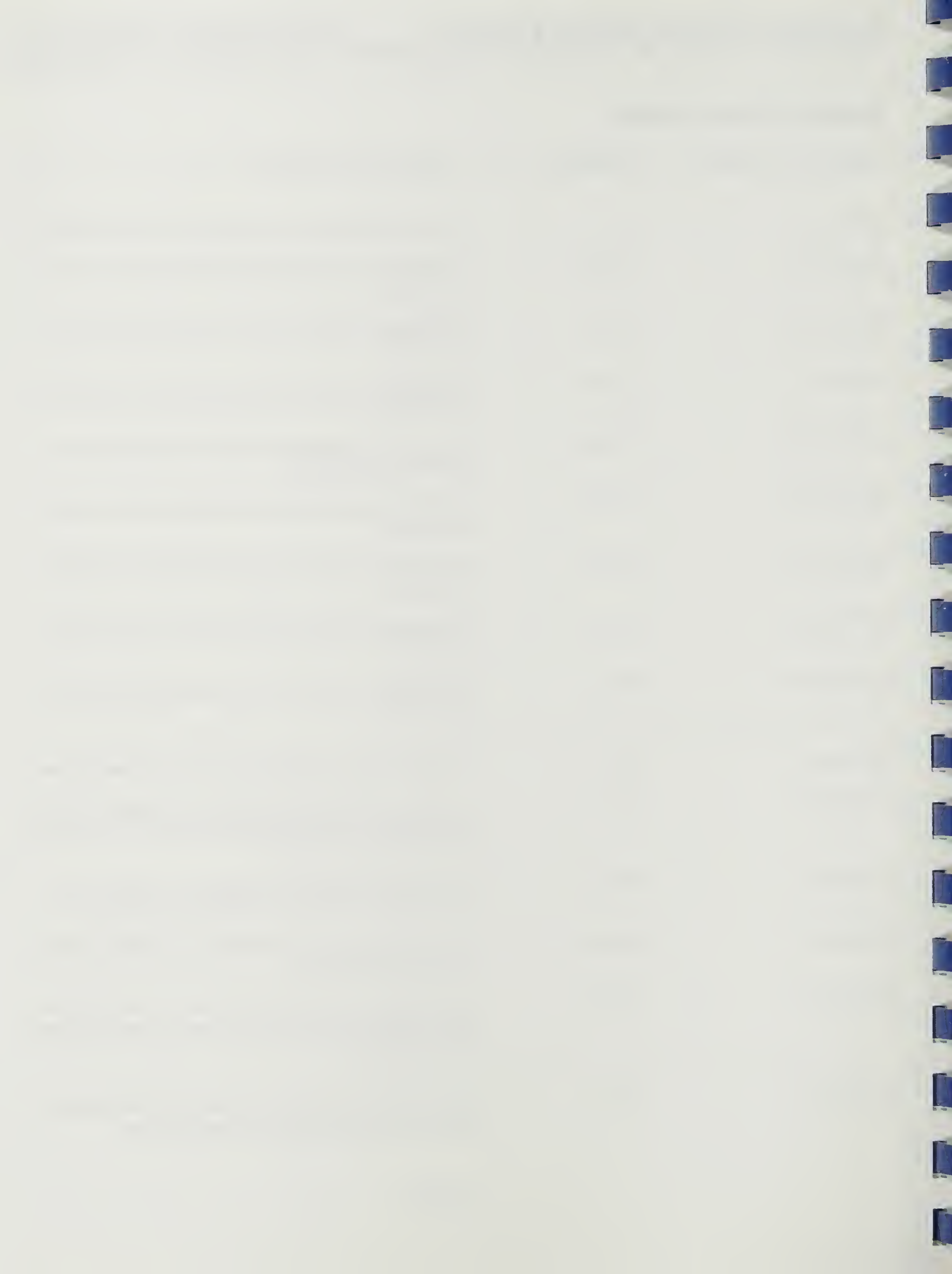
Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-16-9	71.37	6.5" oriented fresh M. annularis w/ a little calcite cement
RGF 8-17-1	73.08	7" A. palmata, A. annularis rubble, heavily encrusted, grey alteration surfaces
RGF 8-17-2	73.64	fresh oriented M. annularis
RGF 8-17-3	74.06	4" oriented M. annularis, relatively fresh, with one thick band of grey alteration, serpulid worm
RGF 8-17-4	74.36	1.5" heavily encrusted A. palmata w/ grey alteration surface
RGF 8-17-5	74.49	5.5" oriented A. palmata w/ serpulid worm. Very small amount of infill in bores
RGF 8-18-1	74.67	4" large coral pieces, heavily encrusted and altered and filled w/ Mg. calcite cement
RGF 8-18-2	75.00	3" coral rubble, most w/ grey alteration surfaces, a few fragments of A. palmata
RGF 8-18-3	75.25	4", 8", 14" oriented A. palmata. These are all part of the same coral,
-4	75.58	they fit together perfectly. Calcite infill, some grey alteration
-5	76.25	surfaces, mollusks in cavities. Grey alteration at breaks, so was broken in three before coring
RGF 8-19-1	82.33	16" of calcareous sand
RGF 8-19-2	83.60	3" of oriented A. palmata w/ grey alteration surface and calcite infill
-3	83.85	2" of oriented A. palmata w/ grey alteration surface and calcite infill
-4	84.0	2" of oriented A. palmata w/ grey alteration surface and calcite infill
-5	84.17	6" of oriented A. palmata w/ grey alteration surface and boring mollusks preserved
-6	84.67	4.5" of oriented A. palmata w/ grey alteration surface and Mg-calcite infill 8-19-2 through 8-19-6 fit together



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-20-1	87.5	5" A. palmata rubble w/ a possible A. cervicornis piece
RGF 8-20-2	87.92	3" oriented A. palmata w/ grey alteration surfaces, Mg-calcite infill
RGF 8-20-3	88.17	3" oriented A. palmata w/ grey alteration surfaces, Mg-calcite infill
RGF 8-20-4	88.32	4" oriented A. palmata w/ grey alteration surfaces, Mg-calcite infill
RGF 8-20-5	88.65	2" A. palmata fragments of unknown orientation, all have barrel-cut surfaces
RGF 8-20-6	88.82	3" oriented A. palmata w/ grey alteration surfaces, Mg-calcite infill
RGF 8-20-7	89.15	1" oriented A. palmata w/ grey alteration surfaces, Mg-calcite infill
RGF 8-20-8	89.23	3" oriented A. palmata w/ grey alteration surfaces, Mg-calcite infill
RGF 8-20-9	89.56	4" oriented A. palmata w/ grey alteration surfaces, Mg-calcite infill
RGF 8-21-1	91.5	8" carbonate sand. Moderately sorted, medium grained.
RGF 8-21-2	92.17	6" carbonate sand. Moderately sorted, medium grained. Mixed with A. palmata fragments that look like pieces of the underlying A. palmata.
RGF 8-21-3	92.67	2.5" oriented A. palmata with partially infilled cavities and crustose coralline algae under grey marine crust.
RGF 8-21-4	92.88	2.75" oriented A. palmata with borings, infilled cavities and grey marine crust.
RGF 8-21-5	93.10	3.75" oriented A. palmata with borings and a thick grey marine crust over a thin layer of crustose coralline algae. Partially infilled.
RGF 8-22-1	97.96	2.25" oriented A. palmata with partially infilled boring and cavities and dark grey alteration surfaces.







Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-22-2	98.15	4" section of A. palmata rubble. Most pieces have dark grey alteration surfaces.
RGF 8-22-3	98.48	3.25" oriented A. palmata with small borings, partially infilled cavities and dark grey to grey alteration layer coated by a bit of crustose coralline algae.
RGF 8-22-4	98.75	4" oriented A. palmata with grey alteration layer and partially infilled borings and cavities.
RGF 8-22-5	99.08	5.5" oriented A. palmata (in 2 pieces that fit together) with crustose coralline algae and partially lithified grey silt cement with gastropod, and partially lithified white carbonate fine grained, poorly sorted sand between the pieces. Infilled cavities.
RGF 8-22-6	99.54	5.5" section of partially lithified poorly sorted, fine grained carbonate sand/silt with chunks of crustose coralline algae and A. cervicornis. Inner part of A. cervicornis stems has infilled cavities.
RGF 8-23-1	100.08	7" section of A. palmata and A. cervicornis rubble and fragments with light grey alteration surfaces on most pieces. Few pieces have dark grey cement crust with H. rubrum and coralline algae. Unaltered and infilled cavities in the inner part of the A. cervicornis stems. Entire sample is probably cave in.
RGF 8-23-2	100.66	22" section of partially lithified poorly sorted white carbonate silt with some fragments (pebble to small cobble size) of fresh unaltered A. cervicornis. Sands contain abundant Halimeda. In five pieces (1.25", 2", 3", 3.75", 3").
RGF 8-24-1	102.13	1.5" A. palmata (orientation unknown) with borings and grey alteration surfaces. Infilled skeletal cavities. Sample is probably cave in.
RGF 8-24-2	102.25	2.75" oriented A. cervicornis with infilled borings and skeletal cavities. Thin grey alteration surfaces. Corals set in partially lithified carbonate silt and sand matrix.
RGF 8-24-3	102.48	12" section of partially lithified poorly sorted white carbonate sediment (silt to gravel) with thin streaks of



## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
		grey coloration. Fragments of fresh unaltered A. cervicornis and A. palmata. Sediment contains abundant Halimeda. Inner part of A. cervicornis stems is unaltered.
RGF 8-24-4	103.48	2.5" oriented A. palmata with extensively infilled skeletal cavities and thin grey alteration surface sand and silt matrix with Halimeda attached to coral.
RGF 8-24-5	103.69	1.25" A. cervicornis (orientation unknown) with sand and silt matrix.
RGF 8-24-6	103.79	2.5" oriented A. palmata with borings and skeletal porosity infilled by cement with attached sand and silt matrix with Halimeda.
RGF 8-25-1	105.40	3" oriented lithified silt and sand with small pieces of A. cervicornis and Millepora (?) or coralline and fragments of grey marine crust with light grey alteration surfaces.
RGF 8-25-2	105.65	6.75" oriented A. palmata (3 corals fused together) with infilled borings and skeletal cavities. Between A. palmata and on top surface are layers of crustose coralline algae with H. rubrum and vermitids coated by thick light grey marine crust.
RGF 8-25-3	106.21	6" oriented sample (in two pieces) of lithified A. cervicornis with thick coralline algal crusts set in silt and sand matrix. A. cervicornis skeletal cavities extremely infilled. Thin light grey marine crust beneath coralline crust. Smaller oriented piece is above larger one.
RGF 8-25-4	106.71	2" oriented lithified sample with several fragments of A. cervicornis with extensive infill of skeletal cavities and thin light grey marine crust, set in silt and sand matrix with H. rubrum and Halimeda.
RGF 8-25-5	106.88	2.5" oriented sample of thick coralline algae with many vermitids and a few borings with carbonate silt and sand matrix stuck to it. Also ~20 loose smaller fragments of A. cervicornis and coralline algae and partially cohesive silt and sand.
RGF 8-25-6	107.08	10" oriented sample of lithified silt and sand with thick coralline algae and a few A. cervicornis extensively



## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
		infilled by cement. A silty partially lithified matrix is attached to top.
RGF 8-25-7	107.92	10" section of broken up very thick coralline algae fragments in white silt carbonate matrix.
RGF 8-25-8	108.75	3" oriented sample of thick coralline algae fragments with 1 small A. cervicornis fragment set in white carbonate silt matrix.
RGF 8-26-1	111.98	17" section of fragments of fresh unaltered A. cervicornis, coralline algae, and minor A. palmata set in partially lithified poorly sorted fine grained white carbonate sand/silt. Lots of brown specks (echinoid shells) within sediment.
RGF 8-26-2	113.40	2.25" oriented sample of lithified silt and sand with abundant echinoid spines and small fragments of
RGF 8-26-3	113.58	2.25" oriented sample containing thin branch of A. palmata with infilled cavities and borings and light grey marine crust with some coralline algae on some surfaces. A. palmata looks mostly altered. Some silty matrix is attached.
RGF 8-26-4	113.77	2.75" oriented dense A. palmata with extensively infilled cavities and borings and thin light grey marine crust on some surfaces. Top surface has .5" to 1.5" silt matrix with common echinoid spines. Almost 50% of sample is sediment.
RGF 8-27-1	115.73	4.25" oriented dense A. palmata (in 2 pieces) with partially infilled skeletal cavities (a bit fresher looking than the A. palmata samples in the last few cores above) and light grey marine crust. Sample may have been fused together with overlying RGF8-26-4.
RGF 8-27-2	116.08	11" section of cobble rubble with silty matrix that contains small fragments of coralline algae and many echinoid spines. Also included are 4 fragments of A. palmata that have extensive infilled cavities and thick light grey marine crust, and several cut fragments of fresh A. cervicornis. Bit of silty matrix stuck to some Acropora pieces.





## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-28-1	117.23	3.25" oriented A. palmata with partially infilled cavities (infill rim) and a bit of crustose coralline algae and thin light grey marine crust.
RGF 8-28-2	117.50	6" section of fragmented cobble-sized thick coralline algae and lithified silt and sand matrix. Most coralline fragments have thin Fe-staining on surface.
RGF 8-29-1	118.44	5" section of exposure crust and A. cervicornis rubble with dark grey alteration surfaces on all pieces. Large A. cervicornis stems are unaltered in the center. Extensively infilled cavities on most pieces. Some totally altered pieces. Entire sample is probably cave in.
RGF 8-29-2	118.85	2.75" oriented A. palmata (5 pieces fit together; broken during coring) with partially infilled cavities (infill rim) and borings with grey alteration surfaces coated with thin light grey marine crust with serpulids, H. rubrum, and Carpentaria monticularis on bottom. This sample may be cave in.
RGF 8-29-3	119.08	3" oriented thick diameter A. cervicornis with extensively infilled cavities and light grey infill rim. Appears to be very altered. Some coralline algal crust and attached sediment matrix.
RGF 8-29-4	119.33	8" section of cobble sized coralline algae fragments and lithified silt matrix with 4 (1.5") pieces of A. cervicornis and pieces of A. palmata (?). Orientation of A. palmata fragments unknown. White cement infilled cavities and borings in some fragments of A. cervicornis and A. palmata. Coralline fragments have thin light grey surface alteration.
RGF 8-30-1	120.81	2.75" oriented A. palmata with white cement infill and some thin crustose coralline algae and pink colored mollusc or echinoid fragments on upper crust.
RGF 8-30-2	121.04	6" section of fresh A. cervicornis fragments (large diameter) with extensive white cement infill and grey infill rims, and thin coralline crusts and many cobble-sized fragments of thick coralline algae and lithified silt and sand matrix with dark specks (echinoid shells?).





## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-30-3	121.54	6.75" (pre-Holocene sample), oriented well lithified white carbonate sand/silt matrix. Lots of sammal and large dissolution vugs, large diameter A. cervicornis lithic fragments with thin marine crust. small diameter A. cervicornis fragment has sediment matrix dissolved away all the way through the core. This core sample fits together with the three following samples.
RGF 8-30-4	122.10	3" oriented large diameter A. cervicornis set om well lithified sand matrix with echinoid spines. Matrix has partially infilled cavities and many small and large dissolution vugs. Still retains light grey color of marine cement infill rim. Sample appears same as overlying sample.
RGF 8-30-5	122.35	3" oriented lithified white carbonate sand/silt matrix. Lots of small and large dissolution vugs. Sample appears as overlying sample.
RGF 8-30-6	122.61	6.25" oriented well lithified white carbonate sand/silt matrix with echinoid spines. Lots of small and large dissolution vugs and visible A. cervicornis lithic fragment.
RGF 8-30-7	123.13	4.5" section of fresh A. cervicornis fragments with minor white cement infilled cavities, light grey crust, and few small dissolution vugs.
RGF 8-30-8	123.5	3.5" oriented lithified white carbonate sand/silt matrix with echinoid spines. Lots of small and large dissolution vugs and visible A. cervicornis lithic fragment with light grey crust.
RGF 8-30-9	123.79	2.5" oriented lithified white carbonate sand/silt matrix. Lots of small and large dissolution vugs and a cavity where A. cervicornis was removed during coring.
RGF 8-30-10	124.0	3.75" oriented lithified white carbonate sand/silt matrix. Lots of small and large dissolution vugs and visible A. cervicornis lithic fragment at top of sample that has its surrounding sedimentary matrix almost completely dissolved away.
RGF 8-30-11	124.31	2.75" oriented lithified white carbonate sand/silt matrix. Lots of small and large dissolution vugs and visible A. cervicornis lithic fragment at top of sample that has its



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
		surrounding sediment matrix almost completely dissolved away.
RGF 8-30-12	124.54	4" section of A. palmata and A. cervicornis fragments with minor white cement infill and light grey to grey marine surface crust.
RGF 8-30-13	124.88	1.5" oriented A. palmata with partially infilled cavities and light grey marine crust.
RGF 8-31-1	128.17	5" section of fragments of lithified white carbonate sand/silt matrix with pieces of A. cervicornis, A. palmata, and thick coralline algae.
RGF 8-31-2	128.58	3" oriented lithified white carbonate sand/silt matrix with A. cervicornis and A. palmata lithic fragments. A. cervicornis has some small dissolution vugs and small borings and light grey marine crust.
RGF 8-31-3	128.83	3.5" oriented large diameter A. cervicornis stem (in 2 pieces). Partially infilled cavities and small dissolution vugs. Center is dense and appears altered. Grey marine surface crust. Sample fits together with underlying sample RGF 8-31-4.
RGF 8-31-4	129.13	2.5" oriented lithified white carbonate sand/silt matrix with dissolution vugs. Sample fits together with overlying sample RGF 8-31-3.
RGF 8-31-5	129.33	5" section of fragments of lithified white carbonate sand/silt matrix with pieces of large diameter A. cervicornis or A. palmata.
RGF 8-31-6	129.75	3" oriented lithified white carbonate sand/silt matrix with small and large dissolution vugs and some shell-moldic porosity.
RGF 8-32-1	130.5	5" section of fragments of A. cervicornis, possibly A. palmata, and lithified white carbonate sand/silt matrix. Coral pieces look totally altered with discolored (leached) crust and some dissolution pits.
RGF 8-32-2	130.92	4.25" oriented lithified white carbonate sand/silt matrix with dissolution pits and spaces where coral lithic





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
		fragments have dissolved out. Large stem of altered A. cervicornis at top of sample.
RGF 8-32-3	131.27	4.75" oriented lithified white carbonate sand/silt matrix (in 3 pieces) with dissolution pits and spaces where coral lithic fragments have dissolved out. A. cervicornis lithic fragments probably altered totally.
RGF 8-32-4	131.67	4" section of fragments of lithified white carbonate sand/silt matrix with dissolution pits and fragments of A. cervicornis.
RGF 8-33-1	131.54	2.25" oriented piece of lithified white carbonate sand/silt matrix with dissolution pits and holes where A. cervicornis has dissolved out.
RGF 8-33-2	131.73	2" oriented piece of lithified white carbonate sand/silt matrix with dissolution pits and holes where A. cervicornis has dissolved out.
RGF 8-33-3	131.90	1.5" section of fragments of lithified matrix and A. cervicornis with cement infilled cavities and dissolution pits.
RGF 8-33-4	132.02	2.75" (2 pieces) oriented piece of lithified white carbonate sand/silt matrix with dissolution pits and with altered A. cervicornis at top (separate piece). Dissolution pits and discolored leached crust on A. cervicornis lithic fragment.\
RGF 8-33-5	132.25	3" oriented piece of lithified white carbonate sand/silt matrix with partially dissolved altered A. cervicornis lithic fragment. Dissolution pits and holes where A. cervicornis used to be.
RGF 8-33-6	132.5	3.5" oriented piece of lithified white carbonate sand/silt matrix with dissolution pits and holes where A. cervicornis used to be.
RGF 8-33-7	132.79	3" oriented piece of lithified white carbonate sand/silt matrix with dissolution pits and holes where A. cervicornis used to be.
RGF 8-33-8	133.14	4" section of fragments of lithified matrix dissolution pits.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-33-9	133.37	4.5" oriented piece of lithified white carbonate sand/silt matrix with dissolution pits and holes where A. cervicornis used to be. Slightly grey surfaces.
RGF 8-33-10	133.75	5" section of fragments of lithified matrix and A. cervicornis with cement infilled cavities and dissolution pits. A. cervicornis probably completely altered.
RGF 8-33-11	134.17	3.25" oriented A. palmata with infilled cavities, and dissolution pits. Slightly grey surfaces.
RGF 8-33-12	134.44	5" section of fragments of lithified matrix and A. cervicornis with cement infilled cavities and dissolution pits. A. cervicornis probably completely altered.
RGF 8-33-13	134.85	1.75" oriented piece of lithified white carbonate sand/silt matrix with dissolution pits and holes where A. cervicornis used to be. Slightly grey surfaces.
RGF 8-34-1	135.79	3" oriented piece of lithified fine grained sand/silt matrix with dissolution pits and A. palmata lithic fragment (separate piece) and A. cervicornis lithic fragment (bottom of sample). Coral fragments have dissolution pits expecially near outer rims, and discolored leached crusts. A. palmata piece possibly good for dating (only partially infilled cavities).
RGF 8-34-2	136.04	5" oriented piece of lithified fine grained sand/silt matrix with dissolution pits and A. palmata lithic fragment (possibly datable), and A. cervicornis lithic fragments. Coral fragments have some dissolution pits and discolored leached crusts.
RGF 8-34-3	136.46	3" oriented piece of lithified fine grained sand/silt matrix with dissolution pits and holes where A. cervicornis used to be and with A. cervicornis lithic fragments with dissolution pits and discolored leached crusts.
RGF 8-34-4	136.71	2.75" oriented piece of lithified fine grained sand/silt matrix with dissolution pits. No visible coral lithic fragments.
RGF 8-34-5	136.94	4.5" section of fragments of lithified matrix (seems to be coarser grained than the matrix above in core) and A. cervicornis. Dissolution pits on most surfaces.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-34-6	137.31	3" oriented piece of lithified white carbonate sand matrix with dissolution pits and holes where some A. cervicornis fragments have been dissolved out. Altered A. cervicornis lithic fragments with dissolution pits.
RGF 8-34-7	137.56	4.5" oriented piece of lithified white carbonate sand matrix with dissolution pits and holes where some A. cervicornis fragments have been dissolved out. Altered A. cervicornis lithic fragments with dissolution pits. Pholad mollusc shells and borings.
RGF 8-34-8	137.94	6" oriented piece of lithified white carbonate sand matrix with dissolution pits, holes where some A. cervicornis fragments have been dissolved out, and borings. Altered A. cervicornis lithic fragments with dissolution pits.
RGF 8-34-9	138.44	3.5" section of fragments of lithified sandy matrix with dissolution pits.
RGF 8-34-10	138.73	5" oriented lithified medium grained sand matrix with dissolution pits and holes where coral fragments used to be. Bit of A.cervicornis stem left in one.
RGF 8-34-11	139.15	7.75" oriented lithified medium grained sand matrix with dissolution pits and holes where coral fragments used to be. Bit of A. cervicornis stem left at bottom of sample.
RGF 8-34-12	139.79	6" fragments of lithified medium grained sand matrix with dissolution pits (2 pieces oriented), and sand.
RGF 8-35-1	143.25	2.5" oriented partially lithified coarse grained, poorly sorted sand matrix with holes where cervicornis stems used to be and dissolution pits.
RGF 8-35-2	143.46	2.75" oriented partially lithified coarse grained, poorly sorted sand matrix with holes where cervicornis stems used to be and dissolution pits.
RGF 8-35-3	143.69	2.5" section of fragments of partially lithified matrix, fragments of A. cervicornis with grey alteration surfaces, and sand.
RGF 8-35-4	143.90	.5" oriented partially lithified (but less so than 8-35-1 and 35-2) coarse grained, poorly sorted sand.



## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 8-35-5	143.94	1" oriented partially lithified (but less so than 8-35-1 and 35-2) coarse grained, poorly sorted sand.
RGF 8-35-6	144.02	2" oriented partially lithified (but less so than 8-35-1 and 35-2) coarse grained, poorly sorted sand.
RGF 8-35-7	144.19	1" oriented partially lithified (but less so than 8-35-1 and 35-2) coarse grained, poorly sorted sand.
RGF 8-35-8	144.27	1.25" oriented partially lithified (but less so than 8-35-1 and 35-2) coarse grained, poorly sorted sand.
RGF 8-35-9	144.38	1.5" oriented partially lithified (but less so than 8-35-1 and 35-2) coarse grained, poorly sorted sand.
RGF 8-35-10	144.50	3" oriented partially lithified (but less so than 8-35-1 and 35-2) coarse grained, poorly sorted sand.
RGF 8-35-11	144.75	3" section of fragments of partially lithified matrix, fragments of <i>A. cervicornis</i> with grey alteration surfaces, and sand.





## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-1-1	13.75	5" calcareous sand
RGF 9-1-2	14.17	2.5" oriented M. annularis
RGF 9-1-3	14.38	2" oriented M. annularis, grey alteration surface
RGF 9-1-4	14.55	2" oriented M. annularis, large vug, grey alteration surface
RGF 9-1-5	14.72	3" oriented M. annularis, made up of 2 pieces.
RGF 9-1-6	14.97	4" oriented M. annularis
RGF 9-1-7	15.30	12" oriented M. annularis, 4 mollusks in bores,
RGF 9-1-8	16.30	6" oriented M. annularis, grey alteration surface
RGF 9-1-9	16.80	2.5" oriented M. annularis, large worms
RGF 9-2-1	18.54	3" oriented M. annularis and 1" small pieces (2 frags, 1 rubble, 1 encrusted mollusk)
RGF 9-2-2	18.87	4.5" oriented M. annularis, w/ grey alteration surface and large worms
RGF 9-2-3	19.25	10" oriented M. annularis, grey alteration crust, vugs
RGF 9-2-4	20.08	5" oriented M. annularis & small frag, grey alteration crust
RGF 9-2-5	20.50	7" oriented M. annularis, grey alteration crust and 1 large vug
RGF 9-2-6	21.08	2" of pieces, made of 2 fragsM. annularis, 1 rubble, grey alteration crust
RGF 9-2-7	21.25	9" oriented M. annularis, made up of 2 pieces that fit together, the upper is 7", lower is 2"
RGF 9-3-1	23.71	6 "rubble w/ M. annularis fragment, grey alteration surface on rubble
RGF 9-3-2	24.21	6" oriented M. annularis, grey alteration crust,





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-3-3	24.71	7" oriented M. annularis, grey crust, pholad borings, consists of 2 large pieces and 1 small pieces
RGF 9-3-4	25.29	8" oriented M. annularis, grey crust, borings and vugs
RGF 9-3-5	25.96	3" A. palmata and M. annularis rubble
RGF 9-3-6	26.21	4.5" oriented P. asteroides (2 pieces). Bottom piece has crustose coralline algae and Cladocora arbuscula cemented to bottom
RGF 9-3-7	26.57	3" same Cladocora arbuscula rubble, 1 mollusk
RGF 9-3-8	26.74	This 2" piece of marine cement w/ coral matrix and crustose coralline algae came up in next barrel, drillers are sure it was fall-in from 9-3, so it is included as the last sample in core 9-3, all depths have been adjusted accordingly
RGF 9-4-1	31.92	11" rubble, containing A. cervicornis, M. annularis, 2 mollusks
RGF 9-4-2	32.84	2" submarine hardground (Mg-calcite cement, grey alteration surface)
RGF 9-5-1	34.17	8" cervicornis rubble, w/ one piece of lithified matrix
RGF 9-5-2	34.84	8" cervicornis rubble, smaller sticks than RGF 9-5-1
RGF 9-6-1	41.5	7" A. cervicornis rubble, 1 gastropod shell
RGF 9-7-1	45'	20" A. cervicornis/A. palmata rubble w/ some pieces of lithified cement. Coral pieces have grey alteration crusts
RGF 9-7-2	46.67	4" piece of oriented P. asteroides, w/ vugs and and pholad borings, Mg-calcite infill in fusion surface, some grey alteration surfaces
RGF 9-8-1	48.17	6 " A. cervicornis rubble



**Sample Descriptions**

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-8-2	48.67	5" oriented A. palmata w/ Mg-calcite cement infill in skeletal pores, numerous vugs, grey alteration crust
RGF 9-8-3	49.09	2" oriented A. palmata w/ grey alteration surface, vugs
RGF 9-8-4	49.26	9" A. cervicornis rubble, some lithified by Mg-calcite matrix
RGF 9-9-1	50.25	7" A. cervicornis rubble
RGF 9-9-2	50.83	2" oriented piece of coralline algae and Mg-calcite infill, grey alteration crust
RGF 9-9-3	51.00	2" piece of Mg-calcite infill in skeletal pores, and thick grey alteration crust
RGF 9-9-4	51.17	2" oriented A. palmata, Mg-calcite infill in skeletal pores, grey alteration crust
RGF 9-9-5	51.34	A. palmata rubble
RGF 9-9-6	51.51	2" oriented A. palmata, Mg-calcite infill in skeletal pores, grey alteration crust, vugs or bores
RGF 9-9-7	51.68	2" oriented A. palmata, Mg-calcite infill in skeletal pores, grey alteration crust, vugs
RGF 9-9-8	51.85	coral rubble, inc. thick cement crust w/ grey alteration surface
RGF 9-10-1	52.10	13" coarse calcareous sand
RGF 9-10-2	52.30	7" A. cervicornis rubble
RGF 9-11-1	55.58	2" section of medium grained, moderately sorted carbonate sand with 2 fragments of A. cervicornis.
RGF 9-11-2	55.75	2.5" oriented A. palmata with small pholad mollusc at top of sample. Fresh looking with a bit of grey marine crust.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-11-3	55.96	3.25" oriented A. palmata with some fresh looking parts, Thick light grey marine crust over a dark grey alteration layer over a thin layer of crustose coralline algae.
RGF 9-11-4	56.23	3" section of medium grained, moderately sorted carbonate sand with fragments of A. palmata.
RGF 9-11-5	56.48	1.75" oriented A. palmata with thick grey marine crust.
RGF 9-11-6	56.63	3" oriented A. palmata (in 2 pieces). Thick light grey marine crust.
RGF 9-11-7	56.88	1.5" oriented A. palmata with dark grey alteration layer.
RGF 9-12-1	60.08	4" section of fragments of A. palmata with some dark grey alteration surfaces.
RGF 9-12-2	60.42	7.5" oriented A. palmata (2 pieces) with borings and pholad mollusc shells. Light grey marine crust fusing two pieces together.
RGF 9-12-3	60.96	.5" section of fragments of A. palmata with some dark grey alteration surfaces.
RGF 9-12-4	61.08	2.5" oriented A. palmata with thick light grey marine crust.
RGF 9-12-5	61.29	3.5" oriented A. palmata in 2 pieces with dissolution (?) holes.
RGF 9-12-6	61.58	1.5" small A. palmata fragment with thick cement crust and with a few fragments (orientation unknown). Dark grey alteration surfaces.
RGF 9-12-7	61.71	3.5" oriented A. palmata with dark grey alteration surfaces and some light grey marine crust. Borings and fragments of pholad mollusc shell.
RGF 9-13-1	65.52	4" section of A. palmata and marine crust fragments. Marine crust is brownish grey. The A. palmata fragments have some dark grey alteration surfaces.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-13-2	65.85	2.25" oriented A. palmata with dark grey alteration surfaces and thin layer of light brownish grey marine crust.
RGF 9-13-3	66.04	8.5" oriented A. palmata with dark grey alteration surfaces and light brown/grey marine crust.
RGF 9-13-4	66.75	3" section of A. palmata and marine crust fragments. Marine crust is brownish grey. The A. palmata fragments have some dark grey alteration surfaces.
RGF 9-14-1	71.29	6" section of fragments of marine crust and A. palmata with marine crust and some carbonate sand.
RGF 9-14-2	71.79	2.5" oriented M. annularis with dark grey alteration surfaces and some unconsolidated light brownish silt/sand matrix stuck to it.
RGF 9-15-1	76.21	3.5" section of fragments of marine crust and A. palmata and other corals?. Marine crust is light brown/grey and A. palmata has dark grey alteration surfaces.
RGF 9-15-2	76.50	1" A. palmata (orientation unknown) with dark grey alteration surfaces, and light brown/grey marine crust.
RGF 9-15-3	76.58	1.5" oriented M. annularis with unconsolidated silt/sand matrix stuck to it.
RGF 9-15-4	76.71	3.5" section of fragments of marine crust and A. palmata and other corals? mixed with some silt and sand. Marine crust is light brown/grey and coral pieces have dark grey alteration surfaces. Silt/sand may be a sample of the matrix.
RGF 9-16-1	80.5	11" section of fragments and rubble of A. palmata, A. cervicornis, marine crust and pieces of unidentified corals. The coral pieces have dark grey alteration surfaces. The marine crust is light brown/grey.
RGF 9-16-2	81.42	3.5" oriented grey marine crust and coralline algae with borings and holes and possibly embedded pieces of coral.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-16-3	81.71	3.5" section of fragments of <i>A. palmata</i> mostly. Some <i>A. cervicornis</i> also. Dark grey alteration surfaces.
RGF 9-17-1	86.25	9" section of fragments and rubble of <i>A. palmata</i> , <i>A. cervicornis</i> , <i>M. annularis</i> , marine crust, and possibly other unidentified corals. Dark grey alteration surfaces on most pieces.
RGF 9-18-1	96.00	9" section of fragments and rubble of <i>A. palmata</i> , <i>A. cervicornis</i> , <i>Diploria</i> (oriented), marine crust and possibly other unidentified corals. Dark grey alteration surfaces on most pieces.
RGF 9-18-2	96.75	3" oriented <i>M. annularis</i> with tan and grey marine crust.
RGF 9-19-1	100.54	9" section of sand and rubble and fragments of <i>M. annularis</i> , marine crust, <i>A. cervicornis</i> , and possible <i>A. palmata</i> . Dark alteration surfaces on most pieces.
RGF 9-19-2	101.29	4.5" oriented <i>M. annularis</i> with tan and grey marine crust.
RGF 9-19-3	101.67	4" section of sand and fragments of <i>M. annularis</i> and marine crust.
RGF 9-20-1	102.65	6" section of fragments and rubble of <i>M. annularis</i> , <i>A. palmata</i> , <i>A. cervicornis</i> , gastropod shell and marine crust. Dark alteration surfaces on most pieces.
RGF 9-20-2	103.15	6.25" oriented <i>A. palmata</i> with marine crust with holes in it (borings or dissolution?). Partially infilled, but looks fairly clean. Fits in with the two samples below it.
RGF 9-20-3	103.67	2.25" oriented grey-brown marine crust with large vermitids and pholad borings with holes and crustose coralline algae.
RGF 9-20-4	103.85	1.75" oriented grey-brown marine crust with holes.
RGF 9-21-1	104.50	1.5" <i>M. annularis</i> (orientation unknown) with a bit of light brownish grey marine crust.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-21-2	104.62	1.5" oriented light brown marine crust and crustose coralline algae with vermitids and borings. This piece fits together with the following 5 samples.
RGF 9-21-3	104.75	2" oriented light brown marine crust and crustose coralline algae with vermitids and borings.
RGF 9-21-4	104.92	1.5" oriented A. palmata with light brown marine crust and crustose coralline algae with vermitids and borings.
RGF 9-21-5	105.04	1" (2 pieces, one is just a chip) oriented small A. palmata with Agaricia, light brown marine crust and crustose coralline algae with borings.
RGF 9-21-6	105.13	2.5" oriented A. palmata with light brown marine crust with embedded mollusc and vermitid shells.
RGF 9-21-7	105.33	1" oriented A. palmata chip with bit of light brown marine crust on one surface. samples 9-21-2 thru 9-21-7 fit together.
RGF 9-21-8	105.42	1.5" section of fragments of marine crust probably from above sample.
RGF 9-21-9	105.54	4.5" oriented A. palmata with slight infilling but looks fairly fresh. Fits together with sample 9-21-10.
RGF 9-21-10	105.92	2" oriented A. palmata. Fits together with sample 9-21-9.
RGF 9-21-11	106.08	5.5" oriented A. palmata with thick layer of light brownish grey marine crust.
RGF 9-21-12	106.54	2" section of fragments of marine crust.
RGF 9-21-13	106.71	3.5" oriented A. palmata and thick marine crust ( in 5 pieces ). Layer of crustose coralline algae and H. rubrum overlain by thick light brown marine crust.
RGF 9-22-1	107.77	6" section of fragments of brown marine crust with crustose coralline algae, A. palmata and M. cavernosa(?).
RGF 9-22-2	108.27	2.75" oriented piece of brown and grey marine crust and crustose coralline algae and many H. rubrum





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-22-3	108.50	2.5" section of fragments of brown and grey marine crust with crustose coralline algae.
RGF 9-22-4	108.71	3.5" oriented A. palmata with crustose coralline algae and light brown marine crust.
RGF 9-23-1	109.75	4.5" oriented A. palmata with brown marine crust. This sample is continuous with the followin 2 samples.
RGF 9-23-2	110.13	1.5" oriented A. palmata.
RGF 9-23-3	110.25	2.25" piece and one chip oriented A. palmata with a bit of brown marine crust on one surface.
RGF 9-23-4	110.42	3" section of fragments of light brown marine crust with crustose coralline algae and a few pieces of A. palmata. The largest piece of crust may fit with the sample below.
RGF 9-23-5	110.67	4" oriented A. palmata with some crustose coralline algae, many vermitids and H. rubrum
RGF 9-24-1	115.75	2" fragments of marine crust and A. palmata with marine crust on it.
RGF 9-24-2	115.92	4.25" (one piece and 3 chips) oriented A. palmata. This sample is continuos with the following 3 samples.
RGF 9-24-3	116.27	2.5" (in two pieces) oriented A. palmata with some brown marine crust between this sample and the underlying sample.
RGF 9-24-4	116.48	4.75" oriented A. palmata with some marine crust with holes at the bottom of the sample.
RGF 9-24-5	116.88	1.5" oriented A. palmata (continuous with the overlying 3 samples). Some areas of black alteration and light grey marine crust and crustose coralline algae.
RGF 9-25-1	121.92	1" piece of A. palmata, cored twice at 90°, thin grey marine crust
RGF 9-26-1	131.75	1" pieces of A. palmata





## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-26-2	131.83	2" piece oriented A. palmata w/ borings and grey alteration crust
RGF 9-27-1	127.67	36" sand
RGF 9-27-2	130.67	2" A. palmata w/ grey crust
RGF 9-27-3	130.84	2" oriented A. palmata w/ grey crust
RGF 9-27-4	131.01	2" oriented A. palmata w/ grey crust
RGF 9-27-5	131.18	2" A palmata (came out sideways)
RGF 9-27-6	131.35	6" M. annularis w/ grey crust
RGF 9-27-7	131.85	2 " M. annularis
RGF 9-28-1	133.92'	2" M. annularis w/ thick grey alteration crust
RGF 9-28-2	134.08'	9" coral rubble
RGF 9-28-3	134.83'	2" oriented M. annularis w/ grey alteration crust
RGF 9-29-1	136.0	7" coral rubble (M. annularis or A. palmata)
RGF 9-29-2	136.58	2" highly encrusted coral piece
RGF 9-29-3	136.75	3" oriented M. annularis, thin alteration crust
RGF 9-30-1	140.75	15" A. cervicornis rubble, w/ M. annularis and frags of thick exposure crusts
RGF 9-31-1	141.25	36" sand
RGF 9-31-2	144.25	9" A. cervicornis rubble, mollusk shell
RGF 9-32-1	150.0	4" A. cervicornis rubble
RGF 9-32-2	150.33	3.5" oriented M. annularis



## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-32-3	150.62	A. cervicornis rubble
RGF 9-32-4	150.95	5" oriented P. asteroides w/ calcite infill inskeletal pores and grey alteration crust(same coral as 9-32-5)
RGF 9-32-5	151.37	2"oriented A. palmata w/ calcite infill inskeletal pores and grey alteration crust (same coral as 9-32-4)
RGF 9-32-6	151.54	5.5" A. cervicornis rubble
RGF 9-33-1	160.17	6" sand
RGF 9-33-2	160.67	4" A. cervicornis rubble
RGF 9-33-3	161.0	3" oriented M. annularis w/ grey altered crust
RGF 9-33-4	161.25	3" A. cervicornis rubble
RGF 9-33-5	161.5	4" oriented Diploria w/ thin grey altered crust (same coral as 9-33-6)
RGF 9-33-6	161.83	2" oriented Diploria w/ grey altered crust (same coral as 9-33-5)
RGF 9-34-1	163.7	4" A. cervicornis rubble
RGF 9-34-2	164.1	2" M. annularis fragment
RGF 9-34-3	164.3	3" M. annularis fragment
RGF 9-34-4	164.5	3" A. rubble
RGF 9-34-5	164.75	M. annularis fragment w/grey marine crust
RGF 9-34-6	165.1	3" oriented A. palmata, relatively unaltered
RGF 9-34-7	165.27	10" oriented A. palmata, part of same coral as 9-34-6, 7-10
RGF 9-34-8	166.10	6" oriented A. palmata, part of same coral
RGF 9-34-9	166.60	2" oriented A. palmata, part of same coral



## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-34-10	166.77	8" oriented A. palmata (3 fragments) part of same coral, thin grey marine crust on bottom
RGF 9-35-1	168.63	3.5" coral rubble (Diploria, A. cervicornis)
RGF 9-35-2	168.99	4" oriented A. palmata, mollusk shell
RGF 9-35-3	169.32	3" oriented A. palmata, thin grey alteration crust, vugs
RGF 9-35-4	169.57	5" rubble (M. annularis, exposure crust)
RGF 9-35-5	169.9	5 "oriented M. annularis (2 pieces) w/ grey alteration crust
RGF 9-35-6	170.32	7" oriented M. annularis
RGF 9-35-7	170.82	3" oriented M. annularis, several pieces 3 oriented
RGF 9-35-8	171.4	6" oriented M. annularis (2 pieces 4", 2")
RGF 9-35-9	172.07	1.5" oriented M. annularis
RGF 9-35-10	172.4	2.5" oriented M. annularis
RGF 9-36-1	169.33	36" sand, probably cave-in
RGF 9-36-2	172.33	8" coral rubble (inc. M. annularis, coralline algae frgs and thick frags marine cement)
RGF 9-37-1	173.63	5" oriented M. annularis
RGF 9-37-2	174.05	7.5" oriented M. annularis w/ grey alteration surface (same coral as 9-37-1)
RGF 9-37-3	174.68	8" oriented M. annularis w/ thick grey cement crust and infill rim
RGF 9-37-4	175.35	5" not oriented M. annularis, with thick grey cement crust and infill rims
RGF 9-37-5	175.68	5" oriented M. annularis w/ grey alteration crust and infill rim





**Sample Descriptions**

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-37-6	176.1	2" oriented M. annularis w/ grey alteration crust and infill rim
RGF 9-37-7	176.27	5" oriented M. annularis w/ thick grey cement crust and a few rubble pieces
RGF 9-37-8	176.76	3" oriented M. annularis w/ grey cement crust and infill rim
RGF 9-38-1	180	6" oriented M. annularis w/ sponge and pholad borings, thick grey crust, with coralline algae.
RGF 9-38-2	180.5	3" oriented M. annularis, borings, part of same coral as 9-38-2
RGF 9-38-3	180.75	4" oriented M. annularis, mollusk, small piece of attached grey crust part of same coral as 9-38-2
RGF 9-38-4	181.08	2" not oriented M. annularis, grey crust
RGF 9-38-5	181.25	9" highly altered M. annularis an dark-grey cement exposure frags. and dark clay-sized sediment
RGF 9-39-1	184.08	3" highly altered and cement-infilled Diploria rubble
RGF 9-39-2	184.33	4" oriented M. annularis, very thick dark grey cement crust
RGF 9-39-3	184.66	4" oriented M. annularis, grey crust on bottom
RGF 9-39-4	184.99	10" oriented Diploria, with thick grey crust on top
RGF 9-39-5	185.98	11" oriented Diploria (made up of 2 pieces- 7", 4"), with very thick grey alteration surface and crust on bottom
RGF 9-39-6	186.9	3" Diploria, extensive crust
RGF 9-40-1	190.17	5" Heavily encrusted Diploria, (3 oriented pieces)
RGF 9-40-2	190.59	6" Diploria rubble
RGF 9-40-3	191.09	6" oriented Diploria, many frags



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-40-4	191.50	5" oriented Diploria, grey crust
RGF 9-41-1	193.33	5" rubble
RGF 9-41-2	193.75	2" oriented M. annularis w/ grey crust
RGF 9-41-3	193.92	2" oriented M. annularis w/ grey crust
RGF 9-41-4	194.09	2" oriented M. annularis w/ grey crust
RGF 9-41-5	194.26	2" oriented M. annularis w/ grey crust, borings
RGF 9-41-6	194.43	8"oriented M. annularis
RGF 9-41-7	195.1	2"oriented M. annularis
RGF 9-41-8	195.27	5"oriented M. annularis (4", 1" pieces) w/ grey crust
RGF 9-41-9	195.69	3"oriented M. annularis, w/ very thick dark grey crust on top
RGF 9-41-10	195.94	3"oriented M. annularis
RGF 9-41-11	195.11	5" (2", 3") oriented M. annularis
RGF 9-41-12	195.61	2" rubble and M. annularis frags
RGF 9-41-13	195.78	3" oriented M. annularis, grey crust
RGF 9-42-1	209.96	4" fragments of altered coral (Diploria ?), marine crust and siltstone. Green-grey coloration due to alteration throughout and possibly high clay content. Dissolution pits and holes.
RGF 9-42-2	210.29	1.75" oriented consolidated silt with carbonate lithic fragments and marine crust. Greenish grey, dissolution pits and holes. Probably continuous with the two samples below it.
RGF 9-42-3	210.44	1.5" oriented consolidated silt with carbonate lithic fragments and marine crust. Greenish grey, dissolution pits and holes, and borings.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 9-42-4	210.56	2" oriented consolidated silt with carbonate lithic fragments and marine crust. Greenish grey, dissolution pits and holes. Siltstone makes up more of this sample than the previous two.
RGF 9-42-5	210.73	2.5" partially lithified moderately sorted greenish grey silt matrix with sand sized carbonate lithic fragments.
RGF 9-42-6	210.94	6.75" oriented consolidated silt matrix with carbonate lithic fragments and marine crust. The top 2/3 of the sample is silt infill of limestone with some dissolution pits, and the texture of the bottom 1/3 looks like marine crust with many dissolution vugs, many fenestral. The entire sample has the same greenish grey color as the rest of the core.
RGF 9-42-7	211.5	6" section of fragments of silt and marine crust frags described in the previous sample.
RGF 9-43-1	216.08	2.25" section of fragments of consolidated green-grey carbonate packstone (1 oriented piece and 5 pieces of rubble). Marine crust, dissolution holes (enhanced borings).
RGF 9-43-2	216.27	3.5" oriented consolidated green-grey carbonate packstone, w/ marine crust and fenestral dissolution vugs.
RGF 9-43-3	216.56	1.5" oriented Diploria rubble with thick green-grey alteration layer and many small dissolution holes.
RGF 9-43-4	216.69	3.75" section (2.75" oriented piece and 1" rubble) of consolidated green-grey carbonate marine crust and serpulids on bottom.
RGF 9-44-1	225.38	8" section of rubble and fragments of marine crust, carbonate packstone and possibly altered coral. All pieces are green-grey color and have dissolution holes.
RGF 9-44-2	226.04	2.75" oriented piece of lithified carbonate sediment: poorly sorted packstone with carbonate lithic fragments. Coral lithic fragments, many dissolution holes, green-grey color.





Sample Descriptions

<u>Hole-Core-Sample</u>	<u>SBD (ft)</u>	<u>Sample Description</u>
RGF 9-44-3	226.27	3.5" oriented piece of lithified carbonate sediment: poorly sorted packstone with carbonate lithic fragments. Coral lithic fragments, few dissolution holes, green-grey color.
RGF 9-44-4	226.56	3" section of fragments of lithified carbonate sediment described in above sample.
RGF 9-44-5	226.81	2.25" oriented piece of lithified carbonate sediment: poorly sorted packstone with carbonate lithic fragments. Coral lithic fragments, many fenestral dissolution holes, green-grey color.
RGF 9-45-1	231.92	1" section of rubble and fragments of marine crust, carbonate packstone and altered coral. All pieces are green-grey color and have small dissolution holes.





## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 10-1-1	14.29'	2" Beige marine crust, crustose coralline algae
RGF 10-1-2	14.46	7" (3 pieces 4", 2", 1") oriented M. annularis. Thin grey alteration surface
RGF 10-1-3	15.04	3.5" oriented M. cavernosa, grey alteration crust
RGF 10-1-4	15.33	6" oriented M. cavernosa
RGF 10-1-5	15.83	2.5" oriented A. palmata, grey alteration surface, borings, crustose coralline algae
RGF 10-1-6	16.04	1.5" oriented A. palmata
RGF 10-1-7	16.17	3" oriented M. annularis, grey alteration surface, coralline algae
RGF 10-1-8	16.42	2" M. annularis, grey alteration surface, borings
RGF 10-1-9	16.59	5" M. annularis (2 oriented pieces, 2 not oriented)
RGF 10-1-10	17.0	12" 3 Pieces (top-bot: 6", 4", 2") oriented M. annularis
RGF 10-2-1	21.17	3" rubble (1 crust, 1 M. annularis)
RGF 10-2-2	21.32	4" oriented M. annularis
RGF 10-2-3	21.65	2" unoriented M. annularis, grey alteration surface
RGF 10-2-4	21.82	2" oriented M. annularis, serpulids, grey alteration surface
RGF 10-2-5	21.99	3" oriented M. annularis, serpulids, grey alteration surface
RGF 10-2-6	22.24	2" unoriented M. annularis
RGF 10-2-7	22.41	2" oriented M. annularis
RGF 10-2-8	22.59	4" unoriented M. annularis (4 pieces)
RGF 10-3-1	0?	6" M. annularis frags, came up in casing, drillers are not sure where it came from but guess it is surface material (0 SBD)



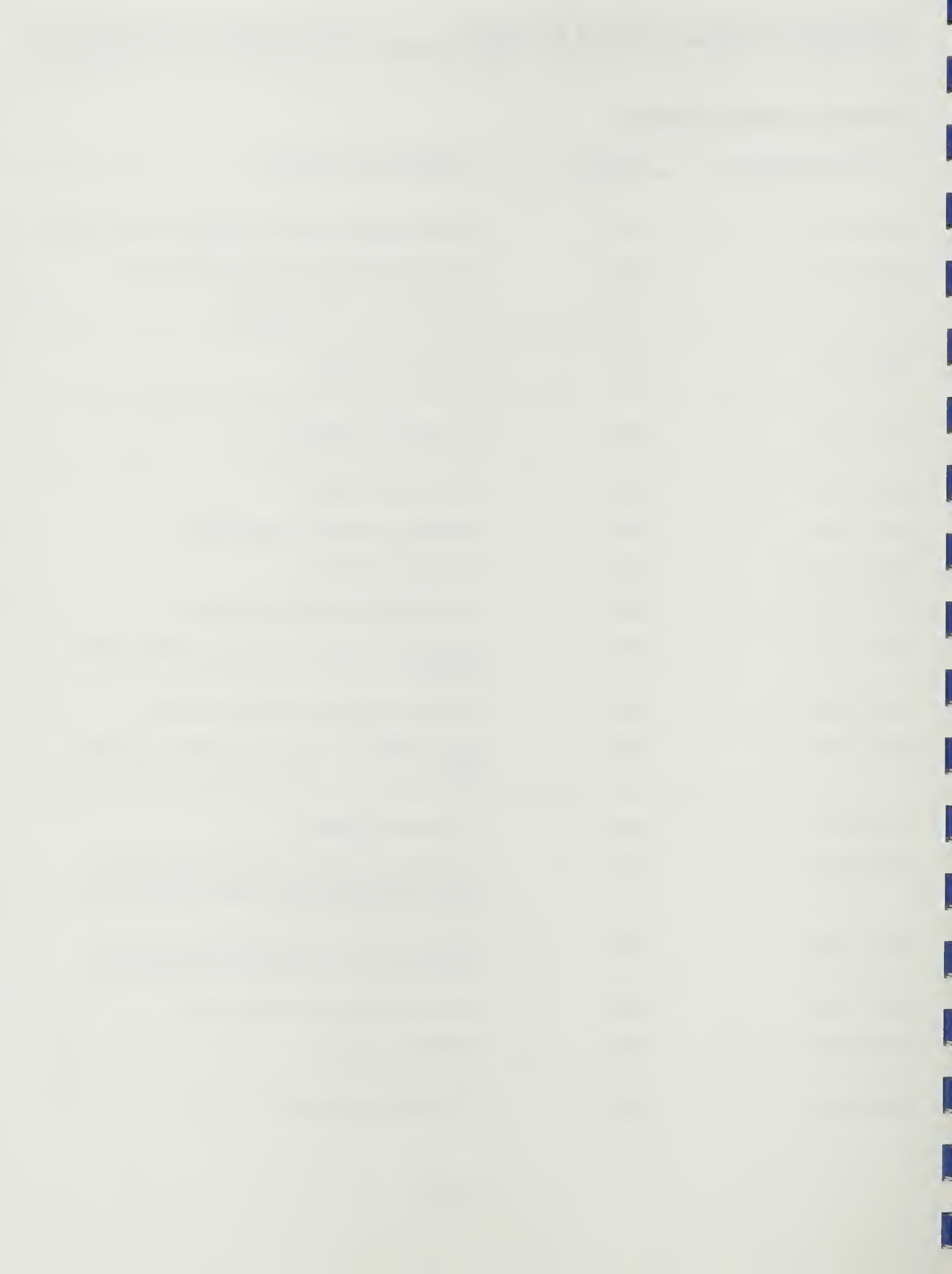
Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 11-1-1	19.10	5" section of fragments of <i>M. annualis</i> , <i>A. palmata</i> , <i>M. cavernosa</i> and marine crust. Most pieces have freshly broken surfaces and surfaces with beige marine crust. Well preserved original surface texture of <i>M. cavernosa</i> .
RGF 11-1-2	19.75	7.75" oriented <i>Diploria</i> with beige marine crust.
RGF 11-2-1	24.25	9" section of fragments of coral and marine crust (including one piece of 1.5" oriented marine crust). Fragments of <i>M. cavernosa</i> , <i>Millepora</i> , <i>A. annularis</i> , <i>A. cervicornis</i> , <i>Siderastrea</i> , mollusc shell, <i>Diploria</i> , and brown and grey marine crust.
RGF 11-3-1	28.88	3" section of medium grained, moderately sorted carbonate sand.
RGF 11-3-2	29.13	4" section of carbonate gravel with various types of coral and marine crust.
RGF 11-3-3	29.46	4" section of rubble and fragments of marine crust, <i>M. annularis</i> , <i>Diploria</i> , <i>A. cervicornis</i> and <i>Millepora</i> .
RGF 11-3-4	29.79	1.25" oriented <i>A. palmata</i> (?) with thick alteration layer and grey marine crust.
RGF 11-3-5	29.90	1.25" <i>A. palmata</i> (orientation unknown) with small dissolution vugs, beige marine crust, orange-brown marine crust and some crustose coralline algae.
RGF 11-4-1	34.10	2" oriented <i>A. palmata</i> with grey and beige marine crust and a few holes, some infilling of holes and cavities.
RGF 11-4-2	34.27	2.75" oriented <i>A. palmata</i> with grey and beige marine crust and a few holes, some infilling of holes and cavities.
RGF 11-4-3	34.50	2.5" oriented <i>A. palmata</i> with grey and beige marine crust and a few holes, some infilling of holes and cavities.
RGF 11-4-4	34.71	3.5" section of rubble with <i>A. cervicornis</i> , <i>Diploria</i> , <i>A. palmata</i> , and other unidentified corals.



## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 12-1-1	15	3" green-grey thick cement exposure crust w/ D. stokesi
RGF 12-1-2	15.25	4" A. cervicornis rubble w/ frags of S. stellata
RGF 12-1-3	15.58	5" cemented A. cervicornis rubble
RGF 12-2-1	20.25	9" A. cervicornis rubble
RGF 12-3-1	29.00	12" A. cervicornis rubble
RGF 12-4-1	34.00	8" A. cervicornis rubble
RGF 12-4-2	34.67	4" oriented A. palmata, crustose algae
RGF 12-4-3	35.00	4" A. cervicornis rubble
RGF 12-4-4	35.33	1" A. palmata w/ grey alteration surface
RGF 12-4-5	35.41	2" A. palmata w/ thick marine crust, and crust rubble fragment
RGF 12-4-6	35.58	3" oriented A. palmata w/ hick marine crust
RGF 12-4-7	35.83	grey alteration crust, vuggy, w/ pholads and crustose algae
RGF 12-5-1	39.42	7" A. cervicornis rubble
RGF 12-5-2	40.0	7" oriented A. palmata, w/ grey alteration surface, crustose algae, small piece of marine crust fits on top (same coral as RGF 12-5-3)
RGF 12-5-3	40.58	2" oriented A. palmata, w/ grey alteration surface, crustose algae, part of same coral as RGF 12-5-2.
RGF 12-5-4	40.75	1" grey alteration crust, crustose algae
RGF 12-5-5	40.83	2" oriented A. palmata
RGF 12-6-1	43.67	6" A. cervicornis rubble





## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 12-6-2	44.17	3" oriented A. palmata w/ thick grey crust
RGF 12-6-3	44.42	2"oriented A. palmata w/ thick grey crust
RGF 12-6-4	44.59	2" oriented marine crust and crustose coralline algae
RGF 12-6-5	44.76	4"oriented marine crust and pholad bores and serpulids
RGF 12-6-6	45.09	3" A. plamata and A. cervicornis rubble
RGF 12-6-7	45.34	8" oriented A. palmata w/ thick grey crust on side and small piece of grey crust at bottom
RGF 12-7-1	45'	13" sand
RGF 12-7-2	46.08'	11" A. cervicornis rubble, thick grey alteration crust on most pieces
RGF 12-8-1	49'	5" A. palmata and A. cervicornis rubble, some marine crust rubble
RGF 12-8-2	49.42'	4" oriented A. palmata w/ grey alteration crust and crustose coralline algae, several pieces of marine crust rubble
RGF 12-8-3	49.75'	2" oriented A. palmata w/ grey alteration crust and crustose coralline algae
RGF 12-8-4	49.87'	3" oriented A. palmata w/ grey alteration crust and crustose coralline algae
RGF 12-8-5	50.20	2" A. palmata and A. cervicornis rubble
RGF 12-8-6	50.36	6" oriented M. annularis w/ grey alteration crust on bottom
RGF 12-8-7	50.86	2" oriented thick grey marine crust
RGF 12-9-1	54.09	Double-cored A. palmata (2")
RGF 12-9-2	54.26	2" A. palmata/ A. cervicornis rubble



## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 12-9-3	54.43	3" oriented A. palmata w/ thick grey crust, skeletal cement infill (same coral as RGF 12-9-4)
RGF 12-9-4	54.68	3" oriented A. palmata w/ piece of M. annularis fused to side. Fusion surface has crustose algae and H. rubrum (same coral as RGF 12-9-3)
RGF 12-9-5	54.93	6" oriented A. p. w/ crustose algae, H. rubrum on bottom as well as cement infill rim (RGF 12-9-6)
RGF 12-9-6	55.43	7" oriented A. palmata, w/ pholad borings and thick grey crusts and ifill rim (same coral as RGF 12-9-5)
RGF 12-10-1	59.67	4" M. annularis, A. cervicornis rubble
RGF 12-10-2	60	3" oriented fragment of thick grey crust, crustose coralline algae
RGF 12-10-3	60.25	4" oriented A. palmata w/ thick grey crust, w/ coralline algae, skeletal cement infill (same coral as RGF 12-10-4)
RGF 12-10-4	60.58	1" oriented A. palmata, part of same coral as 12-10-3
RGF 12-10-5	60.64	1" marine crust
RGF 12-10-6	60.75	3" oriented A. palmata w/ grey crust, cement infill
RGF 12-11-1	60.38	2" section of fine grained, well sorted, white carbonate silt grading (from top to bottom) to medium grained silt.
RGF 12-11-2	60.54	21.5" section of medium grained, moderately sorted, carbonate sand grading (from top to bottom) to coarse grained sand.
RGF 12-11-3	62.33	8" section of fragments and rubble or mostly M. annularis and marine crust. Grey alteration surfaces on most pieces.
RGF 12-12-1	63.94	3.5" section of carbonate gravel.
RGF 12-12-2	64.23	9.25" oriented 3 fused branches of A. palmata ( in two pieces) with thin grey marine crust and crustose coralline algae and many vermatids



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 12-13-1	66.38	3" section of fine grained, well sorted, white carbonate silt grading (from top to bottom) to medium grained silt.
RGF 12-13-2	66.63	19" section of medium grained, moderately sorted, carbonate sand grading (from top to bottom) to coarse grained sand.
RGF 12-13-3	68.21	6.5" section of rubble of marine crust, <i>M. annularis</i> , and other unidentified corals. Grey and dark grey alteration surfaces.
RGF 12-13-4	68.75	3" oriented piece of thick light grey to grey marine crust w/ small <i>A. palmata</i> or <i>A. cervicornis</i> fragment (?)
RGF 12-14-1	69.52	4" carbonate sand and gravel.
RGF 12-14-2	69.85	3.5" oriented <i>A. palmata</i> with grey marine crust and crustose coralline algae. Dark grey cement crust and infill rim on bottom of sample.
RGF 12-14-3	70.15	1.25" oriented beige and grey marine crust.
RGF 12-14-4	70.25	4.5" oriented <i>A. palmata</i> with thick crustose coralline algae layer on upper surface and dark grey crust and infill rim on bottom surface. A few partially cement infilled pholad borings.
RGF 12-14-5	70.63	4.5" oriented <i>A. palmata</i> with thick dark grey and light grey cement crust on upper surface. Borings, one pholad mollusc and partial infilling of borings and skeletal cavities.
RGF 12-15-1	74.48	1.5" oriented <i>A. palmata</i> (fits at bottom of 12-14-5) with dark grey alteration surface.
RGF 12-15-2	74.60	5" section of fragments and rubble of marine crust, mollusc shell, <i>A. palmata</i> and <i>M. annularis</i> . Dark grey alteration surfaces.
RGF 12-15-3	75.02	2.75" oriented thick beige marine crust with some dark grey alteration and crustose coralline algae.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 12-15-4	75.25	5.75" oriented A. palmata with thick dark grey and beige marine crust over a layer of crustose coralline algae on upper side of sample.
RGF 12-15-5	75.73	3.25" oriented A. palmata (2 pieces and 1 chip) with beige marine crust coating a thin layer of dark grey alteration.
RGF 12-16-1	79.42	4" section of fragments of M. annularis with dark grey alteration surfaces and grey marine crust.
RGF 12-16-2	79.75	2.25" oriented piece of crustose coralline algae and a thin grey alteration layer coated by a thick layer of beige marine crust, small A. palmata (?) on M. annularis fragment included
RGF 12-16-3	79.94	3.5" section of fragments of A. palmata with coarse grained, poorly sorted carbonate sand.
RGF 12-16-4	80.23	2.5" oriented A. palmata with dark grey marine cement crust and extensive skeletal infill.
RGF 12-16-5	80.44	6.75" oriented fused branches of A. palmata (in 2 pieces) with dark grey alteration layer and thick beige and grey marine crust on top and sides.
RGF 12-17-1	82.10	5" rubble and fragments of A. palmata with dark grey alteration layer, marine crust, and gastropod shell.
RGF 12-17-2	82.52	4" oriented A. palmata (A. cervicornis ?) with dark grey alteration surface coated with thick beige marine crust on top
RGF 12-17-3	82.85	3.25" oriented A. palmata with dark grey alteration surface coated with thick beige marine crust on top and small and large borings in coral and crust
RGF 12-17-4	83.13	1.25" oriented A. palmata with dark grey alteration surface and cement infilled pholad borings
RGF 12-17-5	83.23	4" section of rubble and fragments of A. palmata with dark grey alteration layer and marine crust.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 12-17-6	83.56	3.5" oriented A. palmata with thin dark grey marine cement crust on bottom and thick crustose coralline algae on top of sample.
RGF 12-17-7	83.85	1.75" A. palmata (orientation unknown).
RGF 12-18-1	85.00	6.5" section of fragments and rubble of beige and grey marine crust and A. palmata with dark grey alteration surfaces.
RGF 12-18-2	85.54	3.75" oriented A. palmata with crustose coralline algae overlain by a thin dark grey layer and thick beige and grey marine crust.
RGF 12-18-3	85.85	1.75" A. palmata. (cut twice, orientation unknown).
RGF 12-19-1	88.78	5" section of rubble and fragments of A. cervicornis, A. palmata and grey and beige marine crust. Most pieces have dark grey alteration surfaces and beige marine crust.
RGF 12-19-2	88.90	1" A. palmata with grey alteration surfaces (orientation unknown).
RGF 12-19-3	88.98	3.25" oriented A. palmata with thin layer of crustose coralline algae, a thin layer of grey alteration, thick layer light grey and beige marine crust and cement infilled borings.
RGF 12-19-4	98.29	5" section of rubble and fragments of A. palmata and grey and beige marine crust. Most pieces have dark grey alteration surfaces and beige marine crust.
RGF 12-19-5	89.71	4" A. palmata (in 2 unoriented and 1 oriented pieces) with dark grey alteration layer coated by thick beige marine crust.
RGF 12-20-1	90.15	2.25" piece of very thick beige marine crust with some dark grey alteration layers
RGF 12-20-2	90.33	2.5" section of fragments of marine crust and A. palmata with dark grey alteration surfaces.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 12-20-3	90.54	5.5" oriented A. palmata ( in 2 pieces ), with dark grey alteration layer coated by thick layer of crustose coralline algae and beige marine crust. Large pholad boring between the 2 pieces. Small and large cliona sponge borings.
RGF 12-21-1	92.17	5" section of fragments of mostly marine crust and crustose coralline algae with some A. palmata.
RGF 12-21-2	92.58	4.75" oriented A. palmata with dark grey alteration surfaces.
RGF 12-21-3	92.98	2.75" oriented A. palmata with dark grey alteration surfaces and grey marine crust and cement infilled borings
RGF 12-21-4	93.21	2.5" oriented A. palmata with a bit of beige marine crust w/ coralline algae and vermatids
RGF 12-21-5	93.42	1.5" section of fragments of marine crust, vermatids, and A. palmata.
RGF 12-21-6	93.54	8.5" oriented A. palmata with thick crustose coralline algae, cement infilled borings, thick light grey and thick beige marine crust on top of piece, and dark grey crust and infill rim on bottom of piece. This sample is continuous with the following 4 samples. 12-21-6 through 12-21-10 are 3 A. palmata corals with thick marine crust cementing them together.
RGF 12-21-7	94.25	6" oriented A. palmata with cement infilled borings, thick light grey and very thick beige marine crust on top of piece, and dark grey alteration surface on bottom of piece.
RGF 12-21-8	94.75	3" oriented piece of small A. palmata frag with pholad borings, coated by crustose coralline algae and thick grey and beige marine crust with embedded echinoid spine fragments and small bivalves.
RGF 12-21-9	95.00	2" oriented A. palmata with cement infilled borings and dark grey alteration surfaces and bit of marine crust.
RGF 12-21-10	95.17	10" oriented A. palmata with thick crustose coralline algae, thick beige marine crust on top of sample, and



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
		crustose coralline algae and dark grey alteration surface at bottom of sample.
RGF 12-22-1	96.15	7" section of fragments of thick light marine crust, A. palmata with grey marine crust and gravel.
RGF 12-22-2	96.73	3.25" oriented Agaricia over M. annularis (in 2 pieces) with large holes and grey alteration surfaces and some beige and light grey marine crust.
RGF 12-23-1	103.00	9" section of fragments and gravel mostly of A. palmata and marine crust.
RGF 12-23-2	103.75	3" oriented A. palmata (in 2 pieces) w/ thin layer crustose coralline algae and light grey crust on top.
RGF 12-24-1	105.67	4" section of fragments of A. palmata w/ grey alteration surface and marine crust.
RGF 12-25-1	110.75	3" section of fragments of A. palmata, A. cervicornis, and marine crust. (One 2" piece is oriented, but cored 2 X, 90° offset)
RGF 12-26-1	114.42	9.5" coarse grained, moderately sorted, carbonate sand.
RGF 12-26-2	115.21	8" section of fragments of A. palmata mostly, with thin marine crust, A. cervicornis, and sand.
RGF 12-26-3	115.88	1.5" oriented S. radians with thin grey alteration surfaces, and well preserved original coral surface on top, several borings
RGF 12-27-1	116.5	6" section of fragments and rubble of A. palmata, A. cervicornis and Millepora. Most pieces have grey alteration surfaces. This sample includes several cobble sized pieces of A. palmata with unknown orientation.
RGF 12-28-1	118.65	2" section of A. palmata and marine crust rubble.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 12-28-2	118.81	3" oriented dense A. palmata coated with thick crustose coralline algae in thick lithified poorly sorted carbonate sand matrix. Core samples fit together from 12-28-2 through 12-28-8.
RGF 12-28-3	119.06	1" oriented partially lithified poorly sorted carbonate sand matrix.
RGF 12-28-4	119.15	9" oriented dense A. palmata coated with thick crustose coralline algae in lithified poorly sorted carbonate sand matrix. Small borings and abundant interparticle porosity in sand matrix.
RGF 12-28-5	119.90	2.25" oriented partially lithified poorly sorted carbonate sand matrix.
RGF 12-28-6	120.08	4.75" oriented dense A. palmata coated with crustose coralline algae in thick lithified poorly sorted carbonate sand matrix. Small borings and abundant interparticle porosity in sand matrix.
RGF 12-28-7	120.48	5" oriented dense A. palmata (A. cervicornis?) with lithified poorly sorted carbonate sand matrix with abundant interparticle porosity.
RGF 12-28-8	120.90	1.25" oriented lithified poorly sorted carbonate sand matrix (in two pieces) with abundant interparticle porosity.
RGF 12-29-1	121.00	8" section of rubble and gravel of mostly A. palmata, A. cervicornis, and marine crust. Dark grey alteration surfaces on most pieces.
RGF 12-29-2	121.67	4" oriented dense A. palmata (3 pieces and 2 chips) with a bit of crustose coralline algae.
RGF 12-30-1	123.17	3" section of A. palmata and lithified reef sediment matrix fragments. A. palmata pieces have light grey alteration surfaces.
RGF 12-30-2	123.42	4" oriented dense A. palmata in lithified reef sediment matrix. A few borings. Samples 12-30-2 through 12-30-5 are continuous.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 12-30-3	123.75	2.25" oriented dense A. palmata with a few borings.
RGF 12-30-4	123.94	3.25" oriented dense A. palmata with borings (with 2 chips). Top coated with crustose coralline algae and grey marine cement crust in partially lithified reef sediment matrix.
RGF 12-30-5	124.21	2.75" oriented dense A. cervicornis (with 2 chips) coated with thick crustose coralline algae and grey marine cement crust in partially lithified reef sediment matrix with a few infilled borings.
RGF 12-30-6	124.44	3.5" section of A. cervicornis and partially lithified reef sediment matrix fragments.
RGF 12-30-7	124.73	2.5" oriented dense thick A. cervicornis coated with crustose coralline algae and thick beige marine crust and some lithified reef sediment matrix.
RGF 12-30-8	124.94	3.75" oriented dense thick A. cervicornis with beige marine crust and some lithified reef sediment matrix attached.
RGF 12-30-9	125.25	9" section of A. cervicornis, some A. palmata, and partially lithified reef sediment matrix fragments.
RGF 12-31-1	126.00	5" section of A. cervicornis, thick marine crust, and lithified reef sediment matrix fragments with possibly a little A. palmata.
RGF 12-31-2	126.42	3" oriented dense thick A. cervicornis stem with thick beige marine crust and some coralline algae underneath.
RGF 12-31-3	126.75	4" section of A. cervicornis fragments and lithified reef sediment matrix and marine crust fragments.
RGF 12-32-1	130.25	2" section of A. cervicornis rubble and lithified reef sediment matrix fragments.
RGF 12-32-2	130.42	6" oriented sample with several dense thick A. cervicornis in lithified reef sediment matrix. Thin layer of crustose coralline algae coats the pieces of A. cervicornis. (3 pieces). Small borings and abundant interparticle porosity in sediment matrix.



**Sample Descriptions**

<u>Hole-Core-Sample</u>	<u>SBD (ft)</u>	<u>Sample Description</u>
RGF 12-32-3	130.92	3" oriented A. cervicornis stick in lithified reef sediment matrix.
RGF 12-32-4	131.17	10" section of A. cervicornis fragments and lithified reef sediment matrix and possibly A. palmata fragments.
RGF 12-33-1	136.67	9" section of A. cervicornis rubble and fragments, and marine crust and lithified reef sediment matrix fragments. Some dark grey alteration surfaces.
RGF 12-33-2	137.42	3.25" oriented sample with several A. cervicornis in lithified reef sediment matrix.
RGF 12-33-3	137.69	3.75" section of A. cervicornis fragments and lithified and partially lithified reef sediment matrix fragments.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 13-1-1	30.83	4" section of M. annularis fragments (orientation unknown)
RGF 13-1-2	31.17	4.5" oriented M. annularis. (Samples 13-1-2 through 13-1-11 make up one 37.25" coral head with green algal bands).
RGF 13-1-3	31.54	4" oriented M. annularis (with chip).
RGF 13-1-4	31.88	3" oriented M. annularis.
RGF 13-1-5	32.13	5.5" oriented M. annularis.
RGF 13-1-6	32.58	5" oriented M. annularis.
RGF 13-1-7	33.00	6.5" oriented M. annularis.
RGF 13-1-8	33.54	3" oriented M. annularis.
RGF 13-1-9	33.79	5.75" oriented M. annularis.
RGF 13-1-10	34.27	3.5" oriented M. annularis (and fragment of marine crust) v dark grey/green alteration surface and marine crust on top. sample fits together (part of same coral head) with 13-1-11 13-2-2.
RGF 13-1-11	34.56	5.25" oriented M. annularis.
RGF 13-2-1	38.21	2.5" section of fragments of M. annularis with light grey marine crust. (one piece oriented).
RGF 13-2-2	38.42	3" oriented M. annularis with light grey marine crust. This sample fits together with sample 13-1-11.
RGF 13-2-3	38.67	7" oriented M. annularis with grey marine crust and boring. This sample fits together with sample 13-2-4.
RGF 13-2-4	39.25	9" oriented M. annularis with grey marine crust and thin crustose coralline algae at contact between two corals.
RGF 13-3-1	54.42	7" section of fragments of Diploria and A. cervicornis, and cervicornis rubble with dark grey alteration surfaces.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 13-4-1	58.33	10" section of rubble and fragments of <i>A. cervicornis</i> , <i>Dipl</i> <i>A. palmata</i> and marine crust. Many pieces have dark grey alteration surfaces.
RGF 13-4-2	59.17	1.5" <i>A. palmata</i> (orientation unknown) with partially infilled borings.
RGF 13-4-3	59.29	2.75" oriented <i>A. palmata</i> with grey marine crust on side and bottom and partially infilled cavities. Sample fits with RGF 13-4-4.
RGF 13-4-4	59.52	5.75" oriented <i>P. asteroides</i> with bit of grey marine crust and small borings. Sample fits with RGF 13-4-3.
RGF 13-5-1	60.83	14" section of rubble and fragments of <i>M. annularis</i> and <i>A. cervicornis</i> . There are also a few fragments of <i>A. palmata</i> , <i>Diploria</i> , and thick marine crust. Dark grey alteration surface on most pieces.
RGF 13-6-1	68.06	3" section of fragments of <i>A. palmata</i> , <i>M. annularis</i> and thick grey marine crust with dark grey alteration surfaces on some surfaces.
RGF 13-6-2	68.31	3" oriented <i>M. annularis</i> with thick dark grey and beige marine crust, and pholad mollusc.
RGF 13-6-3	68.56	2" section of fragments of <i>M. annularis</i> and dark grey marine crust.
RGF 13-6-4	68.73	2.5" oriented <i>M. annularis</i> .
RGF 13-6-5	68.94	3.5" section of fragments of <i>M. annularis</i> .
RGF 13-6-6	69.23	3.5" oriented <i>M. annularis</i> with partially cement infilled boring, dark grey alteration layer and dark grey marine crust with serpulids on bottom.
RGF 13-6-7	69.52	2.25" oriented <i>M. annularis</i> with beige marine crust.
RGF 13-6-8	69.71	2.25" oriented <i>M. annularis</i> with beige marine crust coating grey alteration surface.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 13-6-9	69.90	1.25" Agaricia (orientation unknown) with some beige and marine crust.
RGF 13-7-1	72.19	10" section of fragments of mostly M. annularis (some Dipl and marine crust fragments) with dark grey alteration surface on some pieces.
RGF 13-7-2	73.02	3.5" oriented P. asteroides with thick beige marine crust and infilled borings. This sample is from the same coral as 13-
RGF 13-7-3	73.31	6.75" oriented P. asteroides (with 2 chips) and a few boring (same coral as 13-7-2)
RGF 13-7-4	73.88	2.75" oriented A. palmata with crustose coralline algae and beige and grey marine crust.
RGF 13-7-5	74.10	1.5" section of A. palmata fragments.
RGF 13-7-6	74.23	9.25" oriented A. palmata with dark grey alteration surfaces coated with beige marine crust and a few partially cement in borings.
RGF 13-8-1	75.44	9" section of rubble and fragments of mostly M. annularis v dark grey alteration surfaces and marine crust.
RGF 13-8-2	76.19	5.5" oriented M. annularis with dark grey alteration and beige marine crust on bottom
RGF 13-8-3	76.65	4.75" oriented M. annularis with beige marine crust and cav infill on side of coral
RGF 13-8-4	77.04	4" oriented A. palmata with holes and dark grey alteration surfaces coated with thick beige marine crust. Some cement surface areas have dark green coloration.
RGF 13-8-5	77.38	4" section of rubble and fragments of marine crust and unidentified coral.
RGF 13-8-6	77.71	3.25" oriented dense A. palmata with some crustose coralline algae, extensive skeletal cement infill This sample fits together with 13-8-7.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 13-8-7	77.98	3.25" oriented A. palmata with a bit of beige marine crust, extensive skeletal cement infill. Same coral as 13-8-6
RGF 13-8-8	78.25	4.25" oriented dense A. palmata (with a few fragments of marine crust) with dark grey alteration surfaces coated with brown/grey marine crust, extensive skeletal cement infill
RGF 13-8-9	78.60	8.75" oriented dense A. palmata with dark grey/green altera surfaces coated with thick beige marine crust, extensive skeletal cement infill
RGF 13-8-10	79.33	4" section of fragments of mostly marine crust and coralline algae and some unidentified corals.
RGF 13-8-11	79.67	4" oriented M. annularis with beige and grey marine crust v serpulids
RGF 13-9-1	84.04	9" section of fragments of M. annularis, A. palmata, and m crust mixed with coarse grained carbonate sand.
RGF 13-9-2	84.79	2.5" A. palmata (orientation unknown) with grey alteration surfaces.





## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 14-1-1	33.67	8" section of coarse grained, moderately sorted carbonate sand.
RGF 14-1-2	34.33	8" section of fragments and rubble of <i>M. annularis</i> , and <i>A. cervicornis</i> and thick marine crust. Grey alteration surfaces with some thin beige marine crust on some coral pieces.
RGF 14-2-1	73.25	12" coarse grained carbonate sand
RGF 14-2-2	74.25	5" <i>Diploria</i> rubble and coarse grained carbonate sand
RGF 14-2-3	74.67	4" <i>M. annularis</i> w/ thin grey marine crust and fragments of marine crust rubble
RGF 14-3-1	77.92	8" <i>M. annularis</i> fragments and rubble, grey alteration crust on most surfaces
RGF 14-3-2	78.58	4" oriented <i>M. annularis</i> (same coral as 14-3-3)
RGF 14-3-3	78.91	5" oriented <i>M. annularis</i> w/ light beige crust on bottom, crustose coralline algae (same coral as 14-3-2)
RGF 14-3-4	79.33	4" oriented <i>M. annularis</i> w/ partially lithified sand on top of thin top light grey crust
RGF 14-3-5	79.66	4" oriented <i>M. annularis</i> w/ light grey alteration surface on top and bottom
RGF 14-4-1	83.25	4" <i>Diploria</i> rubble and frags
RGF 14-4-2	84.58	5" oriented <i>Diploria</i> , same coral as 14-4-3
RGF 14-4-3	85.	2" oriented <i>Diploria</i> , same coral as 14-4-2
RGF 14-4-4	85.17	6" <i>Diploria</i> frags
RGF 14-4-5	85.67	4" small <i>A. cervicornis</i> fragments



## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 14-5-1	88'	4" fine to medium grained sand
RGF 14-5-2	88.33	2" section of Marine crust frags w/ coralline algae and small A. cervicornis pieces, mollusks
RGF 14-5-3	88.5	6" oriented M. annularis w/ thin light grey crust on top and bottom
RGF 14-5-4	89.0	1" M. annularis/ A. cervicornis frags
RGF 14-5-5	89.08	2" oriented M. annularis, clionid sponge borings, serpulid worms, crustose coralline algae, same coral as 14-5-6, 14-5-7
RGF 14-5-6	89.25	3" oriented M. annularis, thin grey crust, clionid sponge borings, same coral as 14-5-5, 14-5-7
RGF 14-5-7	89.5	6" oriented M. annularis, clionid sponge borings, light grey infill rim, thick crustose coralline algae, same coral as 14-5-6, 14-5-7
RGF 14-6-1	94.92	1" (4 pieces) M. annularis/A. cervicornis fragments w/ dark grey crusts and extensive cement infill
RGF 14-7-1	96.25	4" medium grained carbonate sand
RGF 14-7-2	96.58	11" small A. cervicornis fragments, w/ some pieces of M. annularis w/ crustose coralline algae, Diploria, and marine crust
RGF 14-8-1	98.00	11" A. cervicornis/M. annularis fragments w/ dark grey alteration surface and extensive cement infill w/ carbonate gravel
RGF 14-8-2	98.92	6" oriented M. annularis (same coral as 14-8-3)
RGF 14-8-3	99.42	4" oriented M. annularis (same coral as 14-8-2), grey alteration surface w/ serpulids on bottom and 3 grey crust chips, extensive skeletal infill



Hole=RGF 14 3 /Dec/88 19:00AST Lat=13.0367°N Lon=59.5476°W Water depth=26

Sample Descriptions

<u>Hole-Core-Sample</u>	<u>SBD (ft)</u>	<u>Sample Description</u>
RGF 14-8-4	99.75	3" oriented M. annularis w/ thick grey crust and serpulids on side
RGF 14-9-1	104.83	2" small A. cervicornis/M. annularis fragments w/ grey alteration surface
RGF 14-10-1	119.75	3" oriented A. palmata w/ thin grey crust, crustose coralline algae, serpulids, extensive cement infill rim and skeletal infill, same coral as 14-11-2,14-11-3
RGF 14-11-1	124.75	1.5" oriented A. palmata, thin grey crust w/ crustose coralline algae, serpulids, same coral as 14-11-1,14-11-3
RGF 14-11-2	124.88	1.5" oriented A. palmata, grey acrust w/ crustose coralline algae, serpulids, cement infill rim, small borings, same coral as 14-11-1,14-11-2
RGF 14-12-1	128.83	2" (5 pieces) coral fragments. 3 A. palmata w/ grey cement crust and infill rim (possibly part of 14-10-1 through 14-22-3) and 2 M. annularis frags w/ light grey alteration surface



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 15-1-1	18.33	5" section of fragments and rubble of Diploria, M. annularis, marine crust, and Porites.
RGF 15-1-2	18.75	11" oriented M. annularis with green/grey alteration surfaces.
RGF 15-1-3	19.67	6" oriented M. annularis with dark green/grey alteration surfaces.
RGF 15-1-4	20.17	2.5" section of fragments of M. annularis and marine crust.
RGF 15-1-5	20.38	5.5" oriented Agaricia ? (in 2 pieces) with dark grey alteration surfaces.
RGF 15-1-6	20.83	13" oriented Diploria with dark grey alteration surfaces.
RGF 15-2-1	23.88	7" section of fragments of M. annularis, Diploria, and dark grey marine crust.
RGF 15-2-2	24.46	2.75" oriented Diploria.
RGF 15-2-3	24.69	6" oriented M. annularis with infilled hole and light grey marine crust.
RGF 15-2-4	25.19	8.25" oriented M. annularis with algal bands, and with dark green/grey alteration surfaces and light grey marine crust. This is from same coral head (fits together with 15-2-5).
RGF 15-2-5	25.88	13.5" oriented M. annularis.
RGF 15-3-1	29.98	4.5" section of fragments of Diploria, marine crust and M. annularis mixed with coarse grained carbonate sand.
RGF 15-3-2	30.35	5.25" oriented M. annularis with algal bands. 15-3-2 through 15-3-6 are from the same coral head and fit together.
RGF 15-3-3	30.79	5.75" oriented M. annularis with algal bands.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 15-3-4	31.27	2.75" oriented M. annularis.
RGF 15-3-5	31.50	2" oriented M. annularis.
RGF 15-3-6	31.67	4" oriented M. annularis.
RGF 15-4-1	36.83	2" section of fragments of M. annularis and A. palmata ??
RGF 15-5-1	51.04	3" section of fragments of M. annularis.
RGF 15-5-2	51.29	4.25" oriented M. annularis with algal bands.
RGF 15-5-3	51.65	4.25" section of A. palmata (2 pieces) rubble with grey alteration surfaces overlying 1 piece oriented A. palmata with dark grey-green alteration surfaces and some unconsolidated grey carbonate silt sediment matrix still on top of piece. Borings and piece of pholad mollusc shell.
RGF 15-6-1	56.25	2.25" oriented A. palmata with grey alteration surfaces.
RGF 15-6-2	56.44	2.25" oriented A. palmata with grey alteration surfaces.
RGF 15-6-3	56.63	4.5" section of M. annularis fragments and coral rubble with grey alteration surfaces.
RGF 15-7-1	71.33	8" section of fragments of M. annularis with grey marine crust and grey alteration surfaces. One piece of A. cervicornis.
RGF 15-8-1	76.83	2" oriented A. palmata (with 2 fragments) with small borings and some crustose coralline algae.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 15-9-1	84.65	1.25" oriented A. palmata with dark grey alteration surfaces.
RGF 15-9-2	84.76	3" oriented A. palmata with dark grey alteration surfaces.
RGF 15-9-3	85.01	1.75" oriented A. palmata with dark grey alteration surfaces.
RGF 15-9-4	85.15	3.5" oriented thick crustose coralline algae with some A. palmata.
RGF 15-9-5	85.44	2.25" oriented A. palmata.
RGF 15-10-1	85.63	2" section of fragments of A. palmata (2 fragments).
RGF 15-10-2	85.79	2.5" A. palmata.
RGF 15-10-3	86.00	2.25" A. palmata.
RGF 15-10-4	86.19	3" A. palmata (2 pieces) with grey alteration surfaces.
RGF 15-10-5	86.44	4" A. palmata rubble (3 pieces) with grey alteration surface and marine crust on one piece.
RGF 15-10-6	86.77	2.75" A. palmata.
RGF 15-11-1	89.15	6" section of fragments and rubble of A. cervicornis, A. palmata and marine crust. Dark grey alteration surfaces.
RGF 15-11-2	89.65	2.5" oriented A. palmata with dark grey alteration surface with thick grey marine crust.
RGF 15-11-3	89.85	1.75" oriented grey marine crust.
RGF 15-12-1	90.19	4" section of fragments of dark grey marine crust.
RGF 15-12-2	90.52	6" oriented A. palmata with partially infilled borings and dark green/grey alteration surfaces.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 15-12-3	91.02	3.5" oriented A. palmata (in 4 pieces) with borings and one piece of pholad mollusc. Dark green/grey alteration surfaces and light grey marine crust.
RGF 15-12-4	91.31	5.25" oriented A. palmata (2 pieces) with dark green/grey alteration surfaces and light grey and beige marine crust.
RGF 15-12-5	91.75	3" oriented A. palmata with dark green/grey alteration surfaces and grey/brown marine crust.
RGF 15-13-1	95.27	3.5" section of fragments of A. palmata (2) and A. cervicornis (1) with grey alteration surfaces.
RGF 15-13-2	95.56	1.75" oriented A. palmata with very dark grey alteration and cemented on carbonate shell debris.
RGF 15-13-3	95.71	2" section of fragments of dark grey/green marine crust and M. annularis.
RGF 15-13-4	95.88	5" oriented M. annularis with lots of beige marine crust over dark grey/green alteration layer.
RGF 15-13-5	96.29	4.5" section of fragments of dark grey/green altered coral with beige marine crust, and Diploria.
RGF 15-13-6	96.67	4" oriented Diploria with boring.
RGF 15-14-1	99.29	6" section of rubble and fragments of M. annularis, mollusc shells, brown marine crust, Diploria and unidentified corals.
RGF 15-14-2	99.79	2.5" oriented M. annularis with light grey and beige marine crust.
RGF 15-14-3	100.00	3.5" oriented M. annularis with bit of beige marine crust. Well preserved original coral surface texture. Same coral head as sample 15-14-4.
RGF 15-14-4	100.29	7.25" oriented M. annularis with beige marine crust.





Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 15-14-5	100.90	8.25" oriented M. annularis (in 2 pieces) with some crustose coralline algae and beige marine crust. Some carbonate reef sediment (unconsolidated) sticking to the top of the sample.
RGF 15-14-6	101.58	1" section of fragments of Diploria.
RGF 15-14-7	101.67	4" oriented Diploria with crustose coralline algae and beige marine crust.
RGF 15-15-1	103.98	4.5" section of fragments of Diploria, mollusc shells, and marine crust.
RGF 15-15-2	104.35	4" oriented Diploria in 2 pieces with dark grey alteration and beige marine crust.
RGF 15-15-3	104.69	2" section of Diploria fragments (3 fragments).
RGF 15-15-4	104.85	4" section of fragments and rubble of mostly marine crust with some Diploria and unidentified corals.
RGF 15-15-5	105.19	3.5" oriented Diploria with dark grey alteration surface.
RGF 15-15-6	105.48	6" section of fragments of Diploria, marine crust, porites, and A. palmata (?).
RGF 15-15-7	105.98	4.25" oriented M. annularis with light grey marine crust.
RGF 15-15-8	106.33	5.5" oriented M. annularis with beige and light grey marine crust. Part of same coral head as 15-15-9.
RGF 15-15-9	106.79	2.5" oriented M. annularis with beige and light grey marine crust.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 16-1-1	8.92	6" section of carbonate coarse grained sand and gravel.
RGF 16-1-2	9.42	4" oriented lithified reef sediment with Diploria and thick beige cement crust with coralline algae fragments and large bivalve.
RGF 16-1-3	9.75	3" section (2 pieces) of lithified reef sediment and thick beige cement crust with crustose coralline algae.
RGF 16-2-1	14.42	7" section of rubble and fragments of lithified reef sediment matrix, crustose coralline algae, thick beige marine crust, A. cervicornis with grey alteration, infill rim, extensive skeletal infill
RGF 16-3-1	19.04	9" section of A. cervicornis fragments with crustose coralline algae and some grey alteration surfaces and thick beige marine cement crust and extensive skeletal infill
RGF 16-3-2	19.79	2.5" oriented A. cervicornis w/ extensive skeletal infill in lithified reef sediment matrix with grey alteration surfaces and many borings
RGF 16-4-1	23.5	13" section of A. cervicornis fragments w/ extensive skeletal infill and gravel. Some pieces have grey alteration surfaces, some are coated by crustose coralline algae and beige cement crust. Also some fragments of Millepora and marine crust.
RGF 16-4-2	24.58	2.5" (2 pieces) of A. palmata (orientation unknown) w/ extensive skeletal infill, with grey alteration surfaces and light grey marine crust on top and bottom
RGF 16-4-3	24.79	2.5" oriented A. palmata with grey alteration surface and infill rim on bottom, extensive skeletal infill.
RGF 16-5-1	26.88	10" section of A. cervicornis rubble and fragments with dark grey alteration surfaces and fragments of beige marine crust. A few mollusc shells.



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 16-5-2	27.71	2.5" oriented A. palmata with dark grey alteration surfaces on side and some crustose coralline algae, infill rims, extensive skeletal cement infill.
RGF 16-5-3	27.92	1" oriented A. palmata with dark grey alteration surfaces on top and bottom, and extensive skeletal cement infill.
RGF 16-6-1	28.96	9" section of A. cervicornis fragments and rubble with fragments of A. palmata w/ infill rims, extensive skeletal cement infill and marine crust. Dark alteration surfaces on most pieces.
RGF 16-6-2	29.71	3.5" oriented A. palmata with dark grey alteration surface and grey marine crust on top and bottom, infill rim and extensive skeletal infill
RGF 16-7-1	30.73	6" section of A. cervicornis fragments and rubble with fragments of A. palmata and marine crust. Dark grey alteration surfaces.
RGF 16-7-2	31.23	2.25" oriented A. palmata with grey alteration surfaces on top and boring.
RGF 16-7-3	31.42	5.5" section of A. cervicornis fragments and rubble with dark grey alteration surfaces, some w/ thick dark grey cement crusts and extensive skeletal infill.
RGF 16-7-4	31.88	1.5" oriented small A. palmata (?) fragments with thick grey marine crust on top and bottom and crustose coralline algae and serpulids on bottom, extensive skeletal infill.
RGF 16-8-1	32.21	6" section of A. cervicornis rubble and fragments with dark grey alteration surfaces mixed with fragments of light grey marine crust, A. palmata, and Millepora.
RGF 16-8-2	32.71	2.5" oriented A. palmata with dark grey alteration surfaces on side and grey infill rim
RGF 16-8-3	32.92	3.5" section of A. cervicornis rubble and fragments and A. palmata fragment with dark grey alteration surfaces and cement crust.





## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 16-8-4	33.71	3.5" oriented A. palmata with dark grey alteration surfaces and light grey marine crust on top and bottom. One large boring, extensive skeletal cement infill.
RGF 16-8-5	33.50	6" section of A. cervicornis rubble and fragments with A. palmata fragments. All pieces have dark grey alteration surfaces, and some are coated with light grey marine crust and have grey infill rims and extensive skeletal infill.
RGF 16-9-1	34.17	10" section of A. cervicornis rubble and fragments with dark grey alteration surfaces and cement crust. A few fragments of A. palmata and marine crust, extensive skeletal infill.
RGF 16-10-1	41.48	9" section of A. cervicornis rubble and fragments with dark grey alteration surfaces and some fragments of A. palmata and marine crust. Corals have extensive skeletal infill and grey infill rims.
RGF 16-10-2	42.23	3" oriented A. palmata with dark grey alteration surfaces and crust on top and bottom, with borings, partial infilling of borings, piece of pholad mollusc. Extensive grey infill rim and skeletal beige infill.
RGF 16-10-3	42.48	4" section of A. cervicornis rubble ( and a few fragments of A. palmata ) with dark grey alteration surfaces.
RGF 16-10-4	42.81	3.25" oriented small A. palmata fragment with thick dark grey alteration surfaces and crust on top and bottom, borings, and a piece of pholad mollusc. Extensive skeletal infill and grey infill rim. Serpulids and coralline algae.
RGF 16-10-5	43.08	4.25" oriented A. palmata with dark grey alteration surfaces, infilled borings and cavities, pholad mollusc, infill rims, and very thick light grey marine crust, extensive skeletal infill.
RGF 16-10-6	43.44	2.75" oriented A. palmata with dark grey alteration surfaces and thin crust and partially infilling of cavities and borings. Extensive skeletal infill.





## Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 16-10-7	43.67	4" section of fragments of dark grey marine crust and A. palmata with dark grey alteration surfaces and extensive skeletal infill
RGF 16-11-1	43.96	6" section of A. cervicornis rubble and A. palmata fragments with dark grey alteration surfaces, marine crusts, extensive skeletal cement infill
RGF 16-11-2	44.46	1" oriented A. palmata with dark grey alteration surfaces and infill rims and some crustose coralline algae.
RGF 16-11-3	44.54	4" section of fragments of A. palmata and A. cervicornis with thick dark grey alteration layer. Extensive skeletal infill rims
RGF 16-11-4	33.88	1.5" oriented A. palmata with dark grey alteration surfaces on top and side coated by thin crustose coralline algae. Extensive skeletal infill
RGF 16-12-1	47.4	3.5" frags of thick dark grey marine crust and one piece A. cervicornis rubble w/ extensive skeletal infill
RGF 16-12-2	47.69	2.5" oriented A. palmata w/ dark grey alteration surfaces and infill rims and thick light grey marine crust on top. Coralline algae on bottom, infilled pholad borings
RGF 16-12-3	47.9	2.5" oriented A. palmata w/ dark grey alteration surfaces and thick light grey marine crust on top and sides
RGF 16-12-4	48.11	7" fragments of A. palmata (2 larger pieces oriented) w/ dark grey alteration surfaces, infilled rims and borings
RGF 16-12-5	48.71	5" oriented A. palmata w/ infilled borings and dark grey alteration surfaces and cement crusts on top and bottom, extensive skeletal infill
RGF 16-12-6	49.13	4" oriented A. palmata w/ cement infilled borings. Thin grey crust on top, same coral as 16-12-7
RGF 16-12-7	49.47	5.5" oriented A. palmata w/ infilled borings and thin dark grey crust w/ serpulids on bottom. Same coral as 16-12-6



Sample Descriptions

Hole-Core-Sample	SBD (ft)	Sample Description
RGF 16-12-8	49.93	1" oriented dark grey marine crust in two pieces, a little A. palmata, dark grey marine crust, serpulids, beige infill.
RGF 16-13-1	50.38	5" A. palmata rubble, a few frags, dark grey alteration surface
RGF 16-13-2	50.80	2.5" oriented A. palmata, grey crust on top, infill rim (same coral as 16-13-3)
RGF 16-13-3	51.01	4" oriented A. palmata, grey crust on bottom, infill rim, (same coral as 16-3-2)
RGF 16-13-4	51.34	3" dark grey marine crust frags possibly same coral as 16-13-3
RGF 16-13-5	51.59	5" oriented A. palmata, dark grey crust on top and side, extensive skeletal infill and grey infill rims, beige crust on top.



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 1 18/Nov/88 20:28AST Lat=13.0346°N Lon=59.5423°W Water depth=12

## Core Depths

<u>Hole-Core</u>	<u>SBD (ft) *</u>
1-1 (H)	0
1-2 (H)	5
1-3 (H)	23
1-4 (H)	27
1-5 (H)	28.5
1-6 (H)	30
1-7 (H)	40
1-8 (H)	44
1-9 (H)	45
1-10 (H)	45
1-11	49
1-12	51
1-13	52
1-14	57
1-15	58
1-16	60
1-17	64
1-18	65
1-19	92

---

\* Depths given for Hammer samples (H) is the top of core. Depths given for NX drill string samples (all others) is bottom of core.





Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 2 21/Nov/88 13:00AST Lat=13.0367°N Lon=59.5475°W Water depth=22

## Core Depths

<u>Hole-Core</u>	<u>SBD (ft)</u>
------------------	-----------------

2-1 (H)	0
---------	---

2-2 (H)	0
---------	---



Core Depths

Hole-Core	SBD (ft)
4-1 (H)	0
4-2 (H)	11



## Core Depths

<u>Hole-Core</u>	<u>SBD (ft)</u>
5-1	14 (H)
5-2	15 (H)
5-3	18 (H)
5-4	20 (H)
5-5	20 (H)
5-6	21 (H)
5-7	23 (H)
5-8	25 (H)
5-9	26 (H)
5-10	27 (H)
5-11	28 (H)
5-12	29 (H)
5-13	34 (H)
5-14	36
5-15	41



Core Depths

Hole-Core	SBD (ft)
6-1	9





## Core Depths

<u>Hole-Core</u>	<u>SBD (ft)</u>
7-1	4
7-2	6
7-3	21
7-4	26
7-5	28
7-6	31
7-7	34
7-8	35
7-9	38
7-10	41
7-11	44
7-12	51
7-13	56
7-14	59.5
7-15	61
7-16	66
7-17	69
7-18	71
7-19	76
7-20	81
7-21	86
7-22	88
7-23	91
7-24	93
7-25	94
7-26	96
7-27	101
7-28	106
7-29	110



**Core Depths**

<u>Hole-Core</u>	<u>SBD (ft)</u>
8-1	15
8-2	20
8-3	25
8-4	30
8-5	35
8-6	40
8-7	45
8-8	49
8-9	50
8-10	51
8-11	55
8-12	59
8-13	63
8-14	65
8-15	70
8-16	72
8-17	75
8-18	77.5
8-19	85
8-20	90
8-21	93.5
8-22	100
8-23	102.5
8-24	104
8-25	109
8-26	114
8-27	117
8-28	118
8-29	120
8-30	125
8-31	130
8-32	132
8-33	135
8-34	140
8-35	145



## Core Depths

<u>Hole-Core</u>	<u>SBD (ft)</u>
9-1	17
9-2	22
9-3	27
9-4	32
9-5	35.5
9-6	42
9-7	45
9-8	50
9-9	52
9-10	53
9-11	57
9-12	62
9-13	67
9-14	72
9-15	77
9-16	82
9-17	87
9-18	97
9-19	102
9-20	104
9-21	107
9-22	109
9-23	111
9-24	117
9-25	122
9-26	132
9-27	132
9-28	135
9-29	137
9-30	145
9-31	142
9-32	152
9-33	162
9-34	167
9-35	172
9-36	173
9-37	177
9-38	182
9-39	187
9-40	192
9-41	197
9-42	212
9-43	217
9-44	227
9-45	232





Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 10 1/Dec/88 08:35AST Lat=13.0433°N Lon=59.5553°W Water depth=25

## Core Depths

<u>Hole-Core</u>	<u>SBD (ft)</u>
------------------	-----------------

10-1	18
10-2	23
10-3	0 (?)



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 11 1/Dec/88 08:35AST Lat=13.0433°N Lon=59.5553°W Water depth=25

## Core Depths

<u>Hole-Core</u>	<u>SBD (ft)</u>
11-1	20
11-2	25
11-3	30
11-4	35



## Core Depths

<u>Hole-Core</u>	<u>SBD (ft)</u>
12-1	16
12-2	21
12-3	30
12-4	36
12-5	41
12-6	46
12-7	47
12-8	51
12-9	56
12-10	61
12-11	63
12-12	65
12-13	69
12-14	71
12-15	76
12-46	81
12-17	84
12-18	86
12-19	90
12-20	91
12-21	96
12-22	97
12-23	104
12-24	111
12-25	106
12-26	116
12-27	117
12-28	121
12-29	122
12-30	126
12-31	127
12-32	132
12-33	138



Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 13 3/Dec/88 19:00 AST Lat=13.0367°N Lon=59.5476 °W Water depth=20

## Core Depths

<u>Hole-Core</u>	<u>SBD (ft)</u>
13-1	35
13-2	40
13-3	55
13-4	60
13-5	62
13-6	70
13-7	75
13-8	80
13-9	85





Barbados Offshore Drilling Program R/V Ranger Cruise 88-13  
Hole=RGF 14 4 /Dec/88 10:30AST Lat=13.0367°N Lon=59.5476°W Water depth=26

## Core Depths

<u>Hole-Core</u>	<u>SBD (ft)</u>
14-1	35
14-2	75
14-3	80
14-4	85
14-5	90
14-6	95
14-7	97.5
14-8	100
14-9	105
14-10	115
14-11	125
14-12	130



Core Depths

<u>Hole-Core</u>	<u>SBD (ft)</u>
15-1	22
15-2	27
15-3	32
15-4	37
15-5	52
15-6	57
15-7	72
15-8	77
15-9	85.63
15-10	87
15-11	90
15-12	92
15-13	97
15-14	102
15-15	107
15-16	112
15-17	117
15-18	120
15-19	122
15-20	127
15-21	132
15-22	137
15-23	142
15-24	147
15-25	152



**Core Depths**

<u>Hole-Core</u>	<u>SBD (ft)</u>
16-1	10
16-2	15
16-3	20
16-4	25
16-5	28
16-6	30
16-7	32
16-8	34
16-9	35
16-10	44
16-11	45
16-12	50
16-13	52





Tidal Corrections

Hole-core	Date	Time (AST)	SBD (ft.)	Tidal Correction (ft.)	Corrected SBD (ft.)	Corrected DBSL (ft.)
RGF 1-1	11-19-88	0:00	0.00	-1.81	-1.81	119.10
RGF 1-2	11-19-88	2:36	5.00	-1.18	3.82	124.73
RGF 1-3	11-19-88	4:35	23.00	-0.48	22.52	143.43
RGF 1-4	11-19-88	5:00	27.00	-0.32	26.68	147.59
RGF 1-5	11-19-88	5:37	28.50	-0.27	28.23	149.14
RGF 1-6	11-19-88	6:30	30.00	-0.23	29.77	150.68
RGF 1-7	11-19-88	7:23	40.00	-0.40	39.60	160.51
RGF 1-8	11-19-88	8:30	44.00	-0.81	43.19	164.10
RGF 1-9	11-19-88	8:55	45.00	-0.93	44.07	164.98
RGF 1-10	11-19-88	9:30	45.00	-1.30	43.70	164.61
RGF 1-11	11-19-88	18:37	48.00	-0.23	47.77	168.68
RGF 1-12	11-19-88	19:14	50.00	-0.26	49.74	170.65
RGF 1-13	11-19-88	20:16	50.90	-0.51	50.39	171.30
RGF 1-14	11-19-88	20:51	56.00	-0.63	55.37	176.28
RGF 1-15	11-19-88	21:20	56.80	-0.91	55.89	176.80
RGF 1-16	11-19-88	21:38	59.40	-0.99	58.41	179.32
RGF 1-17	11-19-88	23:13	62.25	-1.66	60.59	181.50
RGF 1-18	11-19-88	23:56	64.60	-1.76	62.84	183.75
RGF 1-19	11-20-88	4:45	82.00	-0.65	81.35	202.26
<hr/>						
RGF 2-1	11-21-88	17:20	0.00	-0.76	-0.76	223.71
RGF 2-2	11-21-88	21:00	0.00	0.32	0.32	224.79
<hr/>						
RGF 4-1	11-23-88	3:30	0.00	-1.83	-1.83	217.85
RGF 4-2	11-23-88	4:30	11.00	-1.68	9.32	229.00
<hr/>						
RGF 5-1	11-23-88	6:27	14.00	-1.02	12.98	232.66
RGF 5-2	11-23-88	6:55	15.00	-0.93	14.07	233.75
RGF 5-3	11-23-88	7:20	18.00	-0.73	17.27	236.95
RGF 5-4	11-23-88	8:40	20.00	-0.55	19.45	239.13
RGF 5-5	11-23-88	9:30	20.00	-0.63	19.37	239.05
RGF 5-6	11-23-88	10:00	21.00	-0.86	20.14	239.82
RGF 5-7	11-23-88	10:19	23.00	-0.94	22.06	241.74
RGF 5-8	11-23-88	11:00	25.00	-1.37	23.63	243.31
RGF 5-9	11-23-88	11:45	26.00	-1.64	24.36	244.04
RGF 5-10	11-23-88	12:20	27.00	-2.08	24.92	244.60
RGF 5-11	11-23-88	13:00	28.00	-2.48	25.52	245.20
RGF 5-12	11-23-88	13:30	29.00	-2.60	26.40	246.08
RGF 5-13	11-23-88	14:00	34.00	-2.77	31.23	250.91
RGF 5-14	11-24-88	1:00	36.00	-0.99	35.01	254.69
RGF 5-15	11-24-88	4:00	38.00	-1.82	36.18	255.86



Tidal Corrections

Hole-core	Date	Time (AST)	SBD (ft.)	Tidal Correction (ft.)	Corrected SBD (ft.)	Corrected DBSL (ft.)
RGF 6-1	11-24-88	17:00	7.80	-2.07	5.73	227.64
RGF 7-1	11-25-88	14:05	3.00	-1.97	1.03	33.76
RGF 7-2	11-25-88	16:05	5.65	-2.48	3.17	35.90
RGF 7-3	11-25-88	18:45	18.30	-1.77	16.53	49.26
RGF 7-4	11-25-88	19:25	24.20	-1.28	22.92	55.65
RGF 7-5	11-25-88	20:45	26.30	-0.51	25.79	58.52
RGF 7-6	11-25-88	21:00	29.70	-0.20	29.50	62.23
RGF 7-7	11-25-88	21:54	32.50	0.06	32.56	65.29
RGF 7-8	11-25-88	22:46	34.00	0.35	34.35	67.08
RGF 7-9	11-25-88	23:15	36.40	0.42	36.82	69.55
RGF 7-10	11-25-88	23:30	39.30	0.42	39.72	72.45
RGF 7-11	11-26-88	0:05	42.50	0.32	42.82	75.55
RGF 7-12	11-26-88	2:00	49.83	-0.39	49.44	82.17
RGF 7-13	11-26-88	2:25	54.60	-0.51	54.09	86.82
RGF 7-14	11-26-88	3:40	58.42	-1.04	57.38	90.11
RGF 7-15	11-26-88	4:20	60.25	-1.32	58.93	91.66
RGF 7-16	11-26-88	4:45	64.42	-1.39	63.03	95.76
RGF 7-17	11-26-88	5:30	68.42	-1.51	66.91	99.64
RGF 7-18	11-26-88	5:50	70.85	-1.52	69.33	102.06
RGF 7-19	11-26-88	6:25	74.54	-1.48	73.06	105.79
RGF 7-20	11-26-88	6:45	80.29	-1.46	78.83	111.56
RGF 7-21	11-26-88	7:15	85.42	-1.36	84.06	116.79
RGF 7-22	11-26-88	7:40	87.33	-1.31	86.02	118.75
RGF 7-23	11-26-88	8:05	89.17	-1.19	87.98	120.71
RGF 7-24	11-26-88	8:35	92.58	-1.13	91.45	124.18
RGF 7-25	11-26-88	9:00	93.08	-1.01	92.07	124.80
RGF 7-26	11-26-88	9:25	94.38	-0.97	93.41	126.14
RGF 7-27	11-26-88	10:00	99.27	-0.89	98.38	131.11
RGF 7-28	11-26-88	10:30	104.75	-0.87	103.88	136.61
RGF 7-29	11-26-88	11:25	109.67	-0.91	108.76	141.49
RGF 8-1	11-27-88	3:27	14.40	-0.80	13.60	48.59
RGF 8-2	11-27-88	4:00	18.85	-1.06	17.79	52.78
RGF 8-3	11-27-88	5:15	23.08	-1.38	21.70	56.69
RGF 8-4	11-27-88	6:50	26.90	-1.52	25.38	60.37
RGF 8-5	11-27-88	8:20	31.85	-1.33	30.52	65.51
RGF 8-6	11-27-88	8:50	38.71	-1.28	37.43	72.42
RGF 8-7	11-27-88	9:35	42.67	-1.10	41.57	76.56
RGF 8-8	11-27-88	10:30	47.54	-0.94	46.60	81.59
RGF 8-9	11-27-88	11:10	49.50	-0.88	48.62	83.61
RGF 8-10	11-27-88	11:30	50.00	-0.87	49.13	84.12
RGF 8-11	11-27-88	11:50	53.46	-0.87	52.59	87.58



Tidal Corrections

Hole-core	Date	Time (AST)	SBD (ft.)	Tidal Correction (ft.)	Corrected SBD (ft.)	Corrected DBSL (ft.)
RGF 8-12	11-27-88	13:15	57.45	-1.12	56.33	91.32
RGF 8-13	11-27-88	14:10	63.00	-1.41	61.59	96.58
RGF 8-14	11-27-88	16:24	63.00	-2.03	60.97	95.96
RGF 8-15	11-27-88	19:00	66.04	-1.91	64.13	99.12
RGF 8-16	11-27-88	21:00	68.58	-1.02	67.56	102.55
RGF 8-17	11-27-88	21:50	73.08	-0.77	72.31	107.30
RGF 8-18	11-27-88	23:30	74.67	-0.05	74.62	109.61
RGF 8-19	11-27-88	23:10	82.33	-0.11	82.22	117.21
RGF 8-20	11-27-88	23:40	87.50	-0.03	87.47	122.46
RGF 8-21	11-28-88	0:10	91.50	0.08	91.58	126.57
RGF 8-22	11-28-88	0:45	97.96	0.10	98.06	133.05
RGF 8-23	11-28-88	1:30	100.08	0.04	100.12	135.11
RGF 8-24	11-28-88	1:50	102.13	0.00	102.13	137.12
RGF 8-25	11-28-88	2:30	105.40	-0.18	105.22	140.21
RGF 8-26	11-28-88	3:00	111.98	-0.39	111.59	146.58
RGF 8-27	11-28-88	3:35	115.73	-0.52	115.21	150.20
RGF 8-28	11-28-88	4:00	117.23	-0.75	116.48	151.47
RGF 8-29	11-28-88	4:40	118.44	-0.90	117.54	152.53
RGF 8-30	11-28-88	5:20	120.81	-1.17	119.64	154.63
RGF 8-31	11-28-88	6:00	128.17	-1.37	126.80	161.79
RGF 8-32	11-28-88	6:40	130.50	-1.45	129.05	164.04
RGF 8-33	11-28-88	7:10	131.54	-1.51	130.03	165.02
RGF 8-34	11-28-88	7:30	135.79	-1.52	134.27	169.26
RGF 8-35	11-28-88	7:50	143.25	-1.51	141.74	176.73
<hr/>						
RGF 9-1	11-29-88	18:44	13.75	-1.79	11.96	252.67
RGF 9-2	11-29-88	19:11	18.54	-1.84	16.70	257.41
RGF 9-3	11-29-88	19:36	23.71	-1.84	21.87	262.58
RGF 9-4	11-29-88	20:30	31.92	-1.76	30.16	270.87
RGF 9-5	11-29-88	21:00	34.17	-1.61	32.56	273.27
RGF 9-6	11-29-88	21:30	41.50	-1.52	39.98	280.69
RGF 9-7	11-29-88	22:00	45.00	-1.29	43.71	284.42
RGF 9-8	11-29-88	22:45	48.17	-1.13	47.04	287.75
RGF 9-9	11-29-88	23:20	50.25	-0.86	49.39	290.10
RGF 9-10	11-29-88	23:52	52.10	-0.74	51.36	292.07
RGF 9-11	11-30-88	0:30	55.58	-0.50	55.08	295.79
RGF 9-12	11-30-88	0:50	60.08	-0.44	59.64	300.35
RGF 9-13	11-30-88	1:15	65.52	-0.31	65.21	305.92
RGF 9-14	11-30-88	1:40	71.29	-0.27	71.02	311.73
RGF 9-15	11-30-88	2:15	76.21	-0.23	75.98	316.69
RGF 9-16	11-30-88	3:00	80.50	-0.28	80.22	320.93
RGF 9-17	11-30-88	3:55	86.25	-0.37	85.88	326.59
RGF 9-18	11-30-88	5:25	96.00	-0.84	95.16	335.87
RGF 9-19	11-30-88	6:00	100.54	-1.07	99.47	340.18
RGF 9-20	11-30-88	7:15	102.65	-1.37	101.28	341.99





Tidal Corrections

Hole-core	Date	Time (AST)	SBD (ft.)	Tidal Correction (ft.)	Corrected SBD (ft.)	Corrected DBSL (ft.)
RGF 9-21	11-30-88	8:00	104.50	-1.49	103.01	343.72
RGF 9-22	11-30-88	9:20	107.77	-1.50	106.27	346.98
RGF 9-23	11-30-88	9:45	109.75	-1.48	108.27	348.98
RGF 9-24	11-30-88	10:10	115.75	-1.41	114.34	355.05
RGF 9-25	11-30-88	10:45	121.92	-1.36	120.56	361.27
RGF 9-26	11-30-88	12:19	131.75	-1.07	130.68	371.39
RGF 9-27	11-30-88	14:00	127.67	-0.88	126.79	367.50
RGF 9-28	11-30-88	15:48	133.92	-0.92	133.00	373.71
RGF 9-29	11-30-88	16:00	136.00	-0.98	135.02	375.73
RGF 9-30	11-30-88	16:29	140.75	-1.02	139.73	380.44
RGF 9-31	11-30-88	17:15	141.25	-1.16	140.09	380.80
RGF 9-32	11-30-88	17:48	150.00	-1.22	148.78	389.49
RGF 9-33	11-30-88	18:42	160.17	-1.37	158.80	399.51
RGF 9-34	11-30-88	19:45	163.33	-1.48	161.85	402.56
RGF 9-35	11-30-88	20:00	168.63	-1.51	167.12	407.83
RGF 9-36	11-30-88	20:50	169.33	-1.51	167.82	408.53
RGF 9-37	11-30-88	21:20	173.63	-1.47	172.16	412.87
RGF 9-38	11-30-88	22:15	180.00	-1.35	178.65	419.36
RGF 9-39	11-30-88	22:50	184.08	-1.28	182.80	423.51
RGF 9-40	11-30-88	23:15	190.17	-1.15	189.02	429.73
RGF 9-41	11-30-88	24:00	193.33	-0.96	192.37	433.08
RGF 9-42	12-1-88	2:30	209.96	-0.58	209.38	450.09
RGF 9-43	12-1-88	3:05	216.08	-0.55	215.53	456.24
RGF 9-44	12-1-88	3:50	225.38	-0.56	224.82	465.53
RGF 9-45	12-1-88	4:20	231.92	-0.62	231.30	472.01
<hr/>						
RGF 10-1	12-1-88	15:24	14.29	-0.87	13.42	267.91
RGF 10-2	12-1-88	16:40	21.17	-0.91	20.26	274.75
RGF 10-3	12-1-88	21:45	0.00	-1.52	-1.52	252.97
<hr/>						
RGF 11-1	12-2-88	4:51	19.10	-0.59	18.51	273.00
RGF 11-2	12-2-88	5:05	24.25	-0.66	23.59	278.08
RGF 11-3	12-2-88	5:25	28.88	-0.69	28.19	282.68
RGF 11-4	12-2-88	6:15	34.10	-0.88	33.22	287.71
<hr/>						
RGF 12-1	12-2-88	19:20	15.00	-0.83	14.17	147.48
RGF 12-2	12-2-88	19:30	20.25	-0.86	19.39	152.70
RGF 12-3	12-2-88	20:00	29.00	-1.03	27.97	161.28
RGF 12-4	12-2-88	20:20	34.00	-1.08	32.92	166.23
RGF 12-5	12-2-88	20:45	39.42	-1.14	38.28	171.59
RGF 12-6	12-2-88	21:11	43.67	-1.30	42.37	175.68
RGF 12-7	12-2-88	21:50	45.00	-1.37	43.63	176.94
RGF 12-8	12-2-88	22:00	49.00	-1.45	47.55	180.86





Tidal Corrections

Hole-core	Date	Time (AST)	SBD (ft.)	Tidal Correction (ft.)	Corrected SBD (ft.)	Corrected DBSL (ft.)
RGF 12-9	12-2-88	23:15	54.09	-1.51	52.58	185.89
RGF 12-10	12-2-88	23:37	59.67	-1.51	58.16	191.47
RGF 12-11	12-3-88	0:30	60.38	-1.39	58.99	192.30
RGF 12-12	12-3-88	0:41	63.94	-1.37	62.57	195.88
RGF 12-13	12-3-88	1:05	66.38	-1.23	65.15	198.46
RGF 12-14	12-3-88	1:35	69.52	-1.15	68.37	201.68
RGF 12-15	12-3-88	2:00	74.48	-0.98	73.50	206.81
RGF 12-16	12-3-88	2:45	79.42	-0.86	78.56	211.87
RGF 12-17	12-3-88	3:15	82.10	-0.70	81.40	214.71
RGF 12-18	12-3-88	3:40	85.00	-0.65	84.35	217.66
RGF 12-19	12-3-88	4:10	88.78	-0.57	88.21	221.52
RGF 12-20	12-3-88	4:20	90.15	-0.56	89.59	222.90
RGF 12-21	12-3-88	4:50	92.17	-0.55	91.62	224.93
RGF 12-22	12-3-88	5:15	96.15	-0.57	95.58	228.89
RGF 12-23	12-3-88	5:55	103.00	-0.61	102.39	235.70
RGF 12-24	12-3-88	6:10	105.67	-0.70	104.97	238.28
RGF 12-25	12-3-88	6:20	110.75	-0.73	110.02	243.33
RGF 12-26	12-3-88	6:40	114.42	-0.77	113.65	246.96
RGF 12-27	12-3-88	7:05	116.50	-0.94	115.56	248.87
RGF 12-28	12-3-88	7:30	118.65	-1.01	117.64	250.95
RGF 12-29	12-3-88	8:20	121.00	-1.28	119.72	253.03
RGF 12-30	12-3-88	8:55	123.17	-1.38	121.79	255.10
RGF 12-31	12-3-88	9:45	126.00	-1.62	124.38	257.69
RGF 12-32	12-3-88	10:05	130.25	-1.74	128.51	261.82
RGF 12-33	12-3-88	10:20	136.67	-1.76	134.91	268.22
<hr/>						
RGF 13-1	12-4-88	2:10	30.83	-1.15	29.68	298.29
RGF 13-2	12-4-88	2:35	38.21	-1.09	37.12	305.73
RGF 13-3	12-4-88	3:05	54.42	-0.91	53.51	322.12
RGF 13-4	12-4-88	3:35	58.33	-0.84	57.49	326.10
RGF 13-5	12-4-88	4:00	60.83	-0.70	60.13	328.74
RGF 13-6	12-4-88	4:30	68.06	-0.65	67.41	336.02
RGF 13-7	12-4-88	5:00	72.19	-0.57	71.62	340.23
RGF 13-8	12-4-88	5:40	75.44	-0.55	74.89	343.50
RGF 13-9	12-4-88	6:00	84.04	-0.56	83.48	352.09
<hr/>						
RGF 14-1	12-4-88	11:00	33.67	-1.75	31.92	300.53
RGF 14-2	12-4-88	12:13	73.24	-1.84	71.40	340.01
RGF 14-3	12-4-88	12:30	77.92	-1.83	76.09	344.70
RGF 14-4	12-4-88	13:00	83.25	-1.74	81.51	350.12
RGF 14-5	12-4-88	13:20	88.00	-1.70	86.30	354.91
RGF 14-6	12-4-88	13:30	94.92	-1.67	93.25	361.86
RGF 14-7	12-4-88	14:00	96.25	-1.45	94.80	363.41
RGF 14-8	12-4-88	14:15	98.00	-1.39	96.61	365.22



Tidal Corrections

Hole-core	Date	Time (AST)	SBD (ft.)	Tidal Correction (ft.)	Corrected SBD (ft.)	Corrected DBSL (ft.)
RGF 14-9	12-4-88	13:20	104.83	-1.70	103.13	371.74
RGF 14-10	12-4-88	14:10	114.75	-1.41	113.34	381.95
RGF 14-11	12-4-88	16:34	124.75	-0.41	124.34	392.95
RGF 14-12	12-4-88	17:50	129.83	-0.02	129.81	398.42
<hr/>						
RGF 15-1	12-5-88	0:45	18.33	-1.52	16.81	264.21
RGF 15-2	12-5-88	1:10	23.88	-1.49	22.39	269.79
RGF 15-4	12-5-88	1:40	36.83	-1.46	35.37	282.77
RGF 15-5	12-5-88	2:35	51.04	-1.30	49.74	297.14
RGF 15-6	12-5-88	2:50	56.25	-1.27	54.98	302.38
RGF 15-7	12-5-88	3:35	71.33	-1.06	70.27	317.67
RGF 15-8	12-5-88	6:30	76.83	-0.55	76.28	323.68
RGF 15-9	12-5-88	7:30	84.65	-0.62	84.03	331.43
RGF 15-10	12-5-88	7:30	85.63	-0.62	85.01	332.41
RGF 15-11	12-5-88	10:25	89.15	-1.68	87.47	334.87
RGF 15-12	12-5-88	10:55	90.19	-1.79	88.40	335.80
RGF 15-13	12-5-88	11:15	95.27	-1.98	93.29	340.69
RGF 15-14	12-5-88	11:30	99.29	-2.02	97.27	344.67
RGF 15-15	12-5-88	11:50	103.98	-2.06	101.92	349.32
RGF 15-16	12-5-88	12:50	111.00	-2.16	108.84	356.24
RGF 15-17	12-5-88	13:10	115.58	-2.11	113.47	360.87
RGF 15-18	12-5-88	14:00	116.75	-1.89	114.86	362.26
RGF 15-19	12-5-88	14:10	119.60	-1.86	117.74	365.14
RGF 15-20	12-5-88	14:36	124.25	-1.76	122.49	369.89
RGF 15-21	12-5-88	15:20	128.75	-1.39	127.36	374.76
RGF 15-22	12-5-88	15:46	134.92	-1.27	133.65	381.05
RGF 15-23	12-5-88	16:15	140.42	-0.91	139.51	386.91
RGF 15-24	12-5-88	16:40	145.00	-0.79	144.21	391.61
<hr/>						
RGF 16-1	12-6-88	8:20	8.92	-0.33	8.59	136.89
RGF 16-2	12-6-88	8:42	14.42	-0.39	14.03	142.33
RGF 16-3	12-6-88	8:50	19.04	-0.41	18.63	146.93
RGF 16-4	12-6-88	9:30	23.50	-0.72	22.78	151.08
RGF 16-5	12-6-88	10:10	26.88	-1.11	25.77	154.07
RGF 16-6	12-6-88	10:25	28.96	-1.19	27.77	156.07
RGF 16-7	12-6-88	10:55	30.73	-1.34	29.39	157.69
RGF 16-8	12-6-88	11:10	32.21	-1.61	30.60	158.90
RGF 16-9	12-6-88	11:30	34.17	-1.70	32.47	160.77
RGF 16-10	12-6-88	12:05	41.48	-1.98	39.50	167.80
RGF 16-11	12-6-88	12:15	43.96	-2.01	41.95	170.25
RGF 16-12	12-6-88	13:10	47.40	-2.16	45.24	173.54



COLUMBIA LIBRARIES OFFSITE



CU90646401

